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# West Europe Report

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4 September 1985

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POLITICAL

DENMARK/GREENLAND

COMMUNIST NEWSPAPER ON GREENLAND LABOR UNION, DEFENSE ISSUES

Island's Union Chief Interviewed

Copenhagen LAND OG FOLK in Danish 18 Jul 85 Sec II p 1

[Article by Soren Rasmussen]

[Text] Nuuk/Godthab--The main solution is more education. But more is needed to abolish unemployment in Greenland and fill the greatest possible number of jobs with local workers, in the opinion of the Greenland Workers' Union, SIK. The parliament of Greenland is preparing a bill that will make it much harder to import Danish labor and SIK will soon present an outline of a law that would guarantee equal wages for Greenlanders and "imported" Danes, we were told by SIK chairman Jens Lyberth.

Invited Danes

There are two sides to the employment problem in Greenland. Part of the problem involves wiping out the high level of unemployment, another part is installing many more Greenlanders than there are today in positions as skilled workers, technicians and managers. Roughly 10,000 of Greenland's total population of 52,000 were "born outside Greenland"--in other words, they are Danes.

"A good half of these 10,000 people have been in this country many years and are permanent residents, the other half are what we call 'invited labor.' We are not trying to take effective steps to guarantee the employment of Greenlanders to offend anyone. But it is simply a necessity.

"If nothing is done we will have big labor conflicts and fights at some point. That is what will happen if Greenlanders continue to be spectators and the Danes do the work for us," said Jens Lyberth.

"What would the Danish people say if their entire central administration was manned by Germans and English people? If you sat around watching while the construction sector hired French workers?"

## Unemployment

The unemployment statistics give an idea of the problem SIK now wants to attack more vigorously. In the peak employment season last year unemployment figures on 30 September were distributed as follows: 22 Danes out of work compared to 1488 Greenlanders.

"The main solution lies in more education. But that is not enough. We are still finding that it is hard even for trained native workers to get jobs in competition with Danes," said Jens Lyberth, who in addition to being SIK chairman is also a member of parliament where he is political spokesman for Siumut [socialist, radical home-rule party].

"Therefore we anticipate that in the fall session parliament will approve a law making it harder to employ invited workers. The bill would require everyone who wants to hire imported labor to apply through a centrally-controlled body in each individual case, providing documentation to show that it is not possible to fill the position with a Greenlander," Jens Lyberth explained.

## Education

"This is a simple and vital necessity for the development of Greenland. But there is no immediate solution. In the area of academic education I see no solution to the problem within the next 20 years. But in the area of educating middle-level technicians there is a theoretical possibility that the problem can be solved within 5 or 10 years. However this would require radical changes in the educational system. We have an enormous group of people who leave elementary school without receiving any training. We do not have the capacity in the area of vocational training to accept more than 40 percent of the students each year and to make progress we must decentralize the educational system--among other things we are debating making some of the elementary educational superstructure vocationally oriented. We may put the first part of the basic vocational training programs in the elementary schools," said Jens Lyberth.

## Law on Equal Wages

Until recently SIK believed that equalizing the wage differences between Greenlanders and Danes should be taken care of by the union organizations. The goal has been equal pay for equal work, but in spite of basic support from union organizations in Denmark it has been impossible to solve the matter on the union level. On the contrary, this has led to tension between SIK and the Danish union movement, the SIK chairman told us.

"That is why we are now stressing a political solution by means of legislation. At closed meetings of the SIK executive committee we have discussed a proposal we will make public when we have informed the union organizations in Denmark.



"The equal-wage law can also be used as long as we need imported labor. Of course workers asked to come here must be provided with an economic carrot but this should not be paid until they return to Denmark. The present system under which invited workers are paid higher wages has a negative effect on the real wages paid to SIK members, because it raises prices in stores. And that heightens tensions directed against the Danes," said Jens Lyberth.

The main principle in the SIK proposal is that imported workers will earn severance pay that is frozen while they are in Greenland and is not paid out until they leave the country. The law is intended to guarantee the same disposable income for all workers, whether Danes or Greenlanders.

#### Unemployment Funds on the Way

Greenland does not yet have any unemployment compensation. People out of work have to get along on social assistance that seldom covers more than 50-60 percent of the minimum wage--and that is only enough for the most vital food supplies, according to Jens Lyberth.

The Greenland parliament has now unanimously approved setting up unemployment funds starting in 1987. Membership in SIK or other union organizations recognized by the local government--such as the Greenland Teachers' Association--will be a condition for being included in this system which "will obviously serve to further strengthen the position of the union movement," Jens Lyberth said. The legislation has not yet been enacted but SIK expects support payments to amount to 90 percent of regular earnings.

"And that is the important thing about the arrangement, that members maintain a reasonable economic level if they are unemployed."

#### Nine Thousand Members

Greenland's union movement got started in the 1950's with the establishment of GAS--Greenland's Labor Association. But it was not until the 1970's that the organization really developed in the direction of a class organization for Greenland's working class. In 1980 its structure was strengthened and its name was changed from GAS to SIK--Sulinermik Inuitissarsiuteqartut Kattuffiat, the Greenland Workers' Union. At the congress that year Jens Lyberth was elected chairman in a battle with former GAS chairman Odaq Olsen.

Today SIK has around 7500 paying members plus around 1500 unemployed members who do not pay dues. The budget this year is 5 million kroner, of which 1.4 million comes from the Greenland government and an employer-financed education fund. SIK has over 30 different contracts and includes practically all the workers and salaried employees in Greenland. SIK has local divisions in all towns and either locals or clubs in rural districts.

"One of the important steps in this development was the workers' folk high school we opened in 1977 in Qaqortoq/Julianehab with the help of funds from



Denmark's LO [Federation of Trade Unions]. The school has room for 44 students and is used during part of the year to train shop stewards. And we could see that this training produces results in 1983, for example, when Schluter tried to end the cost-of-living regulations in Greenland. From our office here in Nuuk we could contact union officials along the entire coast and organize a strike. This showed that we could mobilize our troops and make the organization function effectively," said Jens Lyberth.

#### Demilitarized Arctic Seen Goal

Copenhagen LAND OG FOLK in Danish 20-21 Jul 85 p 11

[Article by LAND OG FOLK correspondent Soren Rasmussen]

[Text] Nuuk--The Inuit [Eskimo] people of Greenland, Alaska and Canada are working more and more together for a future on their own terms.

Forget all your ideas about igloos and whale-oil lamps. This is a modern office building of glass and concrete in the center of Greenland's capital, Nuuk. Its neighbors are the Nuna Bank and the Greenland Travel Bureau. Only a discreet sign on the glass door indicates that this is not the entrance to a lawyer's office. The sign reads "Inuit Circumpolar Conference," which is usually abbreviated to ICC. This is the headquarters of the organization which in recent years has developed contacts in a number of areas between the original residents of the Arctic region--the Inuits of Greenland, Canada and Alaska. In all there are roughly 100,000 people of the group called Eskimos by the white people.

#### Arctic Pilot Project

Awareness of the existence of kinsmen on the other side of the Davis Strait has been an important element in the cultural and political thaw in Greenland in the last decade. A foreigner does not have to wait long before hearing the first references to their colleagues in Alaska and Canada.

The power center for this development since 1977 has been ICC. The outside world first heard the organization's name when it issued a demand from its initial conference in Alaska for an Arctic nuclear-free zone. That was in 1977.

Inuit Circumpolar Conference was not officially founded until 3 years after that. The new home-rule government in Greenland invited Inuit delegations from Canada and Alaska to attend a conference in Nuuk. Here they approved the structure and goals of the organization and elected a leadership. Hans-Pavia Rosing of Greenland was elected president.

ICC has become especially well-known south of the Arctic regions for its campaign against Arctic Pilot Project--the plan to allow big icebreaking

tankers to sail through Davis Strait year-round carrying gas from Melville Island in Arctic Canada. The noise from the passage of the enormous ships traveling through ice 2 meters thick might destroy the living conditions needed by whales and seals, ICC feared and it joined the other organizations in Greenland to mobilize a big powerful international opposition. And won-- the project has been postponed indefinitely. In reality it has been abandoned.

### Environmental Strategy

From ICC's beginning 8 years ago protecting the sensitive conditions needed for life in the Arctic has been one of its most important activities.

"We had always been aware that we had kinsmen on the other side of Davis Strait who spoke the same language as we do. But it was the increased demand for Arctic resources that gave cooperation a boost. The Inuit people in Alaska invited us to the first meeting," said ICC president Hans-Pavia Rosing.

"Environmental issues have the highest priority and at the moment we are forming an Arctic environmental strategy. The basis is a philosophy that everything is interconnected--for example, the economy and the environment cannot be separated from welfare, health and communications."

At the founding meeting in 1980 ICC approved a charter for the work of the organization that was then ratified by the home-rule government of Greenland and political authorities in Canada and Alaska. The present work will result in a document describing a coherent policy for the Arctic region. Following its approval at the next ICC general meeting in 1986 this document is also expected to be ratified by political organs in Greenland, Alaska and Canada.

"We are trying to set up standards that will form a cohesive overall Arctic policy. That is the aim based on an Inuit philosophy of creating a framework for future developments on the basis of our own wishes and goals. In the past developments have always been dominated by those in the south and policy has never been planned by the Inuit people themselves," said Hans-Pavia Rosing.

It was experience from the unchecked capitalist search for oil in Alaska in the 1960's and 1970's that lent support to cooperation. But in principle ICC is not opposed to developing resources in the Arctic--the important thing is that exploration and production must occur under very strict environmental regulations and that the Inuit people themselves must approve these projects.

### Oil Exploration Approved

"We support the decision of the Greenland home-rule government to go ahead with oil explorations in Jameson Land in East Greenland in order to create

a base for greater economic independence. This is the first time in Inuit history that we have had an opportunity to say yes or no to exploration for raw materials," Hans-Pavia Rosing stated.

The Jameson Land project, which is getting started this summer, ran into criticism from their colleagues in Canada. But after a thorough discussion by the ICC presidium, it was accepted by Inuit groups in Alaska and Canada too. If the explorations lead to results one could see icebreaking tankers off East Greenland within 10 years--with the approval of ICC.

"But the consequences will be nowhere near as serious as they would be in Davis Strait where the Arctic Pilot Project supertankers would have sailed. There is no permanent ice cover off East Greenland, tankers will come out in ice-free waters a short way from the coast and the ocean is large in comparison to the relatively narrow Davis Strait," explained Hans-Pavia Rosing.

ICC will probably decide at its next general meeting in 1986 to appoint an expert commission that will look into the problems involved in transporting oil, gas and minerals in Arctic regions, a study that would take 2 or 3 years, after which the group would recommend solutions.

#### Inuit Company

"Transport through the very vulnerable natural conditions up here is a cardinal question when we are talking about utilizing resources," said Hans-Pavia Rosing.

The oil exploration in Jameson Land is being financed by American capital with a small Danish element. But in order to achieve an immediate impact on the local economy and employment market ICC set up the Inuit Service Company last year, in which the Greenland government is the majority stockholder. The other stockholder is an Alaskan company with 15 years of experience in oil exploration there. The new firm will participate in construction of an airport and buildings for use in the Jameson Land exploration project and "that will give us a reason to be there so we can keep an eye on what is going on and supervise things," the ICC president said.

#### Recognized by United Nations

The activities of the Inuit organization involve more than just the environment. Below the presidium level there are task forces on research, education, language and culture, conditions for women, communications, health and welfare, economic cooperation and whale hunting.

Five people work at the ICC secretariat in Nuuk and there are also offices in Ottawa, Canada and Anchorage, Alaska, with two staff workers in each office. The organization publishes the periodical INUIT--ARCTIC POLICY REVIEW.

On the international level ICC takes part in such things as the United Nations work on the rights of native ethnic groups and the organization has acquired advisory status in the United Nations. ICC is also part of the international whale hunting commission.

Inuit delegations from Greenland, Canada and Alaska will meet in 1986 for the third ICC general meeting--and among other things they will elect a new president to succeed Hans-Pavia Rosing who after two periods in the post cannot continue to serve under ICC statutes. The presidium is made up of two representatives from each country in addition to the president--aside from Hans-Pavia Rosing, who is a member of Siunut [socialist, radical home-rule party], Greenland is represented by a member of the left-wing Inuit Ataqatigiit [pan-Eskimo] Party and a member of the nonsocialist Atassut Party [moderate, pro-Denmark party].

#### Kinsmen in Siberia

"We call ourselves a circumpolar organization, but so far the Inuit groups in Siberia have not participated in ICC. We have already sent an invitation to Siberia concerning next year's general meeting and there is a latent and unanimous desire in ICC to involve the Siberian Inuits in the organization. Although we take up political topics ICC is basically a cultural cooperation. We would like to include all Inuits--both those who live in the United States and those who live in the Soviet Union," Hans-Pavia Rosing stressed.

It is not yet known if their tribal kinsmen from Siberia will turn up at the general meeting next year. So far contacts have been limited although in 1983 ICC received Soviet permission to represent the Siberian Inuits at an international conference on the sale of endangered animals and plants. Hans-Pavia Rosing hopes to go to Siberia with an American jurist later this year to visit the Inuits in Siberia as a representative of an ICC commission which has been studying the effects of a law on Inuit land claims in Alaska for the last few years.

The first issue of the periodical SEVERNYJE PROSTORY (Northern Regions) came out in the Soviet Union 2 months ago, written and read by Inuits, Lapps and other original ethnic groups in polar areas. The Greenland Aasivik [National Folk Festival] meeting this year had both films and exhibits from Inuits in Siberia. Closer contacts in the future are not at all unlikely.

#### Disarmament in the Arctic

In the area of security policy, ICC has been opposed from the beginning to any expansion of military installations in the Arctic. At the general meeting in 1983 delegates voted unanimously in favor of a resolution calling for total demilitarization of the Arctic. The resolution was followed up by protests against new military activity--among other things, ICC has opposed tests of American cruise missiles in northern Canada and the expansion of U.S. base facilities in Greenland.

"We are in contact with peace groups around the world and if we had more money and more people available we would participate more actively in international peace work," said Hans-Pavia Rosing.

"And in the area of security policy too we have tried to emphasize things we agree on in the entire Arctic region. After ICC has presented its guidelines we leave the details and the shaping of policy to the parliament and government of Greenland and the political authorities in Canada and Alaska."

The problem in this context too is that the Inuits in Canada have no form of political authority and the Alaskan Inuits do not have the same degree of autonomy that they do in Greenland either. And in spite of the home-rule government Inuits in Greenland have no influence over the security policy that is set forth in Copenhagen.

"There are a lot of military installations in the Arctic region that we are simply unaware of. We have entered the discussion at a very late stage and many security policy decisions are made without even consulting us. Now we have stated our position on security policy. The goal is a demilitarized Arctic that contains no nuclear weapons."

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POLITICAL

DENMARK/GREENLAND

BRIEFS

SOVIET CULTURAL FESTIVAL PARTICIPATION--For the 10th Aasivik [National Folk-life Festival] an exhibit and several films were obtained from the Soviet Union on Inuit people in Chokotka peninsula. This was accomplished through the mediation of cabinet member Aqqaluk Lynge. If there had been time, an ensemble would have come too, but he thought this might be done next year. This year's films and Aasivik exhibit show developments in the lives of all the ethnic groups in the Soviet Arctic. "With the outstretched hand Aasivik was extended via the films and the exhibit it should not be difficult in the future to establish cultural contacts with ethnic groups in the Soviet Arctic," said Aqqaluk Lynge. [Text] [Godthaab GRONLANDSPOSTEN in Danish 10 Jul 85 p 9] 6578

CSO: 3613/178



POLITICAL

FEDERAL REPUBLIC OF GERMANY

YOUTH ACCEPT ACHIEVEMENT VALUES, TECHNOLOGY CRITICALLY

Duesseldorf HANDELSBLATT in German 12 Jul 85 p 23

[Article by Prof Dr Ranier Geissler, Gesamthochschule Siegen: "Neither Opposed to Technology Nor Unwilling To Perform"]

[Text] Unwillingness to perform and a reluctance to apply oneself, shying away from responsibility and a generation lacking incentive--these or similar charges are being leveled against the youth of the eighties. There is talk of being tired of and opposed to technology and rejection or even hatred of technology. Is the "skeptical" generation of the postwar era, the "rebellious" generation of the years of prosperity now being succeeded by a generation of "dropouts" disassociating itself from the foundations of modern times and, with an attitude of hostile rejection, turning its back to the society of technological performance? Available empirical data concerning the change in the attitude of youth indicate the need for caution in making sweeping condemnations.

The first conclusion which can be drawn from numerous investigations is this: The interest of youth in technology and its products has clearly increased in the past two decades. In 1981 many more youths were interested in cars and motorcycles, radio and television, technological tinkering, technological draftsmanship and the like than had been the case in 1965. The dry statistics of the Shell studies of 1965 and 1981 merely express in figures what can be observed in everyday life: the image of modern youth is made up of the motorcycle cult and enthusiasm for cars as well as a fascination for entertainment electronics and a certain fondness for sophisticated cameras and expensive photographic equipment or a liking for technological games on home computers. Young people are better informed about microelectronics than are adults, for example.

And yet the slogan of opposition to technology on the part of the young generation emerged in the second half of the seventies.

It was, however, exceedingly premature to interpret the relative reduction in the number of students in engineering and the relatively weak position of mathematics and science following the reform of the upper grades as an indication of a turning away from technology. This is illustrated, for instance, by the fact that 2 1/2 years ago, when word went out about an alleged threatening shortage of engineers, there was a rush toward subjects connected with engineering. And even the relative reluctance in choosing mathematics and science in high school has little to do with an increasing dislike of technology but is primarily connected with placing girls, not familiar with technology, on an equal level in institutes of continuing education.

The empirical data permit a second conclusion: In the past two decades youth has become more critical toward its technological world.

Increasingly an optimistic belief in technology was replaced by greater sensitivity toward possible dangers which technological innovations might entail. Asked fairly pointedly and in a relatively extreme way as to whether technology was rather a "curse" or rather a "blessing," 16- to 20-year-old youths, reflecting this change, responded that, all in all, technology was

	<u>1966</u>	<u>1976</u>	<u>1981</u>
rather a blessing	83%	53%	23%
partly a blessing, and			
partly a curse	8%	33%	54%
rather a curse	2%	8%	19%.

In the case of "milder" questions by Emnid and Infratest, the picture shifted in favor of technology. About half of the youths questioned in 1981 were optimists as far as technology was concerned, with a positive attitude toward technology and believing technological progress to be more beneficial than disadvantageous. About one-third took an ambivalent attitude toward technological progress. The smallest proportion was those with a skeptical or pessimistic attitude toward technology, with about one-fifth taking a rather skeptical stand and about one-sixth considering the disadvantages of technological progress to be greater than its advantages. According to the most recent Eminid poll, the proportion of youths between 20 and 29 who think the disadvantages are greater is 18 percent, but the proportion of those under 20 who think so is only 73 [probably misprint for 13] percent.

If one traces the outlines of attitudes toward the world of technology in somewhat greater detail, one finds that the judgment of youth about technology is in part uninformed but nevertheless quite differentiated and multilayered. It is not technology as such which incurs criticism but certain phenomena of the world of technology. In 1984 Emnid asked about the most unpleasant effects of technological development and received the following replies (in percent):

	<u>16-19 years</u>	<u>20-29 years</u>
Pollution of the environment	20	26
Unemployment	14	25
Nuclear energy, power plants	7	6
Weapons of annihilation, missiles	6	2.

The annihilation potential of weapons systems and the nuclear power plants are important points of crystallization of the criticism of technology but are regarded only comparatively seldom as the most unpleasant aspect of technological development. The principal concerns are directed toward the destruction of the environment and the loss of jobs. About half of the young generation believes that technological progress causes unemployment and infringes on the quality of labor. Only one-fifth agrees that technology makes work more interesting, and every other youth questioned believes that technology makes work more monotonous.

What is interesting here is that this pessimistic appraisals of the results of technology is due to a lack of information and experience, for working people whose jobs have been changed by technological innovations in recent years look at the effects of technological progress in a preponderantly positive manner, 50 percent considering their work more interesting and only 13 percent regarding it as more monotonous.

In the metal industry, jobs with electronics are valued more than jobs without electronics: they are more interesting, less monotonous and more varied, afford greater independence and are more fun, and one learns more. Unskilled and semiskilled workers, however, complain about increasing monotony and isolation as a result of automation.

What are the causes of the change in attitude? The scapegoat is the German educational system, which is purported to be a stronghold of disassociation from, and criticism of, technology. This concept can be proved to be false, however. It may be regarded as an expression of antipedagogical resentment contradicted by the facts. Though German educational establishments are only reluctantly moving away from their neohumanistic tradition, they are not a focal point of opposition to technology. It can be shown that high school teachers are more optimistic as far as technology is concerned than is the case with the population as a whole. What is more likely to be the contribution of the educational system to the change in attitude is the fact that the general rise in the educational level has led to greater sensitivity toward the ambivalences of technological development.

It is likely that the crises in the economic, social, technological and military development have had a greater effect on the change in attitude in the Western industrialized countries than has the expansion of education and the shifts in the value system. Here the key terms are: Energy crises, starting with the oil shock of 1973, preceded by the warnings of the Club of Rome; economic crises (slower, stagnating or receding economic growth, combined with increasing mass unemployment); ecological crises (increasing noise pollution, air pollution and water pollution, illustrating an increase in the harmful side effects of technology).

The dangers of nuclear power plants, the risks of which became apparent to one and all as a result of breakdowns, are exaggerated enormously because they are associated with the destructive power of nuclear bombs. At the same time it became obvious that the big industrialized countries were unable to bring the constant increase of the annihilation potential at their disposal under control.

The fact that unlimited trust in technology turns into critic loyalty to technology is no cause for alarm. On the contrary, a young generation which is interested in technology but at the same time casts a critical eye on the ambivalence of technological development reacts appropriately to the disparateness of the world of technology, with its opportunities and dangers. It is worrisome, however, that there has been an increase in the minority of those who take a pessimistic stand toward technology and then in part turn their back to technological civilization or rebel against it.

Poll data from the sixties and seventies show that the attitudes of youth to the demands of employment have changed. This change in attitude is illustrated by some data of the Allensbach Institute for Demoscopy, which posed the same questions in different years.

Job satisfaction of persons 16 to 29 years old (in percent)

	<u>1960</u>	<u>1967</u>	<u>1973</u>	<u>1980</u>
My current job				
satisfies me completely	46	60	46	33
only partly	47	34	46	56
not at all	7	5	7	10.

The feeling of being fully satisfied with one's current job first spread in the sixties but receded after 1967, and in 1980 was clearly below the level of 1960.

Since the chances of full job satisfaction have decreased, it is not surprising that the search for fulfillment shifted to areas outside the job. Thus the view that "it would be best to live without having to work: spread somewhat among youths 16 to 29 years old, particularly in the sixties:

	<u>1952</u>	<u>1960</u>	<u>1972</u>	<u>1980</u>	<u>1981</u>
Approval	16%	22%	36%	36%	26%
Disapproval	75%	70%	57%	53%	57%

According to other investigations, the willingness to perform has been receding in the past two decades, with hedonistic stands and attitudes of relaxation becoming somewhat more widespread. Into this picture fits the finding of a Shell study that there has been a decrease in the ambition to climb the social ladder. In 1973 as many as 67 percent of the young generation still wanted one day to get further ahead economically than their parents, but 6 years later only 49 percent uttered a desire for climbing the social ladder.



Trend analyses therefore yield the following: In the sixties and seventies the attitudes of part of the young generation toward performance and work has changed. Complete identification with work has eased. A certain disassociation from a society sold on performance is making itself felt. More often than in the past, the demands in training and on the job are felt to be overtaxing, career motivation is weakening, and there is less willingness to perform. The meaning of life and fulfillment are being sought the job--in private life, the family and also in social and political commitment or other leisure activities.

One can distinguish four groups of causes of the change in attitude:

1--Competition by the family, consumption and leisure time. Areas of life outside the job increasingly commit energy, taking it away from the job. Family, consumption and leisure time increasingly compete with the job.

2--Comparative satiation of material demands. The rise in prosperity has caused a situation in which the prospect of a higher income is less of a motivating factor for performance. The material demands in the middle and upper strata having been relatively sated, a climb up the social ladder or increases in income are no longer considered paid for unquestioningly. The system of material stimuli has lost some of its pull for the prosperous strata of society.

3--A change in values. While the satiation hypothesis is controversial, there is solid empirical evidence of the third group of causes. The changes in attitudes toward work are connected with a general change in the value system.

In the past three decades the values of self-development, such as participation, emancipation, variety, pleasure, suspense, self-realization and independence, have gained in importance. On the other hand, so-called duty and acceptance values, such as discipline, obedience, industriousness, readiness to adapt and abstinence, have been pushed back. The higher level of education of the young generation also leads to higher job demands.

4--Poor career prospects. Young people are more likely to be willing to perform if they believe that their efforts will be crowned by success. Here too there exists empirical evidence of the connection. The current poor opportunities for getting a start in work, caused by the lasting crisis on the labor market and exacerbated for young people by the "high in births births," dampen the young generation's willingness to perform.

Is there a danger that the change in attitude described above is announcing the end of a society sold on performance? I think there is no reason to take a dramatic view of developments. First it must be pointed out that among a large majority of the young generation work and success in one's profession or trade continue to rank very high as far as important life interests are concerned. To document this thesis, I would like to cite some results from various polls of the past 5 years:

--For 91 percent, success in work is among the factors that are important.

--A total of 80 percent think that "a profession or trade to one's liking" is among the demands in life which are of particularly great importance as far as their personal life is concerned.

--The statement "As far as I am concerned, performance and success in life are part of it" is endorsed by 78 percent.

--A total of 71 percent would like to embark on a career in a profession or trade.

--For 68 percent, enjoying one's job is part of what makes life worthwhile.

--Between 68 and 75 percent endorse the principle of performance.

Professional training too is reacted to positively by a majority. Enjoyment of such training is greater than enjoyment of college or school. A total of 62 percent of apprentices enjoy their training, but only 54 percent of college students and 34 percent of other students enjoy their education. Finally, interest in continuing professional training is particularly pronounced among the young--about twice as strongly as among the population as a whole. Only a minority would prefer to get out of working--about 20 to 25 percent of youth.

The analysis of empirical data concerning the change in attitude has made it clear that labels such as "reluctance to perform" and "antitechnology" dramatize developments. Only a minority of young people inclines toward turning away from a society of scientific-technological performance. Perhaps the best way to describe the attitude of the majority is to describe it as critical loyalty to technology and performance. Vigilance toward the dangers of technology has destroyed a naive belief in technology without losing sight of the advantages of technological development.

Simple acceptance of expectations of performance in one's work has been replaced by critical handling of the substance and scope of the demands in employment, without a vanishing of one's interest in work or of one's willingness to perform. Youth has left the phase of naive identification with technology and performance and has begun to ponder things more. As long as the real "objectors" remain in a comparatively small minority, there is no reason to adopt a stand of sociological pessimism in light of the change in attitudes. On the contrary, to ponder the problems of technology and performance is to be considered an appropriate answer to the demands and problems posed by modern society.

8790

CSO: 3620/444



POLITICAL

FINLAND

## POLL EXAMINES VOTER VIEWS OF PARTY LEADERS

### Sorsa Gaining Stature

Helsinki UUSI SUOMI in Finnish 14 Jul 85 pp 22-23

[Article by Jyrki Vesikansa]

[Text] It is evident from the poll conducted for UUSI SUOMI by Taloustutkimus Oy [Economic Survey Company] that party leaders' reputations have slightly improved in the eyes of the people. The differences between the different individuals are, however, considerable.

SDP [Social Democratic Party] chairman Kalevi Sorsa is beginning to more and more clearly rise in the eyes of the public as a statesman. The Valco scandal, which overshadowed him in the previous comparable poll in 1982, has clearly been forgotten. Sorsa is far ahead of his competitors in terms of almost all positive qualities.

Conservative Party chairman Ilkka Suominen's reputation has, on the other hand, instead slightly dimmed since 1982 in the eyes of the whole nation as well as in those of his own supporters. He is not exactly associated with negative qualities — in terms of patriotism he even rises to the top and in common sense to second place — but his own people as well as strangers find Suominen distant.

A single quality, patriotism, reverberates in Suominen's profile. In this respect he is the undisputed number-one party leader in the eyes of the nation. As many as 45 percent of SDP supporters associate this quality with Suominen.

Suominen has now received worse ratings than in 1982 in terms of very many qualities: determination, arrogance, self-importance, frequent changes of mind. Suominen as well as all the other party leaders are viewed as becoming more serious-minded — or have people's demands changed in this respect?

Suominen's image has indeed also improved in many respects. He is regarded as being more purposeful, responsible, well-intentioned, even more patriotic. He is also more candid and has more of a sense of humor (or, in the opinion of some, has he become humorless and, in the opinion of others, not?).

Among his own supporters Suominen has strengthened his image, particularly clearly so as concerns his sense of humor. Conservatives also concur with the whole nation in their view of his growing good-naturedness, candor and even rising prestige.

But more often than before Conservatives also consider Suominen to be arrogant and self-important. There are, nevertheless, only a small number, 20 percent, of Conservatives who give him negative ratings. For nearly one out of every five Conservatives Suominen is still indeed distant, whereas only 8 percent of SDP supporters associate that trait with Sorsa and only 3 percent of Center Party supporters with Vayrynen.

#### Women Wish He Had a Sense of Humor

Women in general give Suominen better ratings than men do. They are, however, more dissatisfied with his sense of humor — in this respect unambiguously so, also through the use of the word, humorless.

How people feel about Suominen politically generally conforms to the normal distribution — attitudes improve from the Left to the Right. SDP supporters, however, are slightly ahead of Center Party supporters as regards his patriotism and candor. In the Center Party there are also more — even more than in the SKDL [Finnish People's Democratic League] — of those in whose opinion Suominen is quarrelsome.

Especially those ratings involving esteem and common sense (35 percent), however, tell us that Center Party supporters basically respect Suominen.

#### Things Are Brighter with Vayrynen

Paavo Vayrynen was caught up in the last poll at a time when presidential election coalitions, the incipient Jalasmokki affair and the events relating to it were rocking the new Center Party chairman. This time the waves have calmed down, Vayrynen is laying particular emphasis on his duties as foreign affairs minister and day-to-day politics has been left more to the care of party secretary Seppo Kaariainen.

This also appears as an improvement of Vayrynen's image in the eyes of the people. It is, however, still not very free of conflict: Vayrynen somehow accumulates top ratings in all of his negative qualities.

So, while Suominen's profile is still a low one, Vayrynen certainly has rough edges, but in perhaps questionable areas.

On many points Vayrynen has indeed succeeded in improving his image in the eyes of the whole nation. But, like the general confirmation of the Center Party's position on the basis of the election results, this has above all taken place in the party's strong areas.

## In the Big Cities

Center Party chairman Paavo Vayrynen can rejoice at the cleaning up of his reputation in the nation as a whole as well as in his own circle. His joy is, however, relative since especially big city upper-echelon office workers, the basic supporters of the Conservative Party, regard him as overly serious, arrogant and irritating.

There are so many people who are fed up with Vayrynen that he overwhelmingly obtains the top rating of all the party leaders in almost all of the negative qualities in the nation as a whole. While the critics account for "only" a third or a fourth of the nation, this is certainly of importance to Vayrynen's future. Particularly since the sharpest criticism is coming from the non-socialists.

That is, if anyone imagines that Vayrynen may be a common nonsocialist presidential candidate, he will have to thoroughly improve his image in the big city office worker constituencies. Vayrynen's image has, however, worsened even more so than before since the summer of 1982 among the members of this group.

Elected chairman of the SKDL last May, the fourth party leader, Esko Helle, is really in the wrong category in this comparison. Participating the last time was Kalevi Kivisto, a presidential candidate that same year, and he did well. Helle, on the other hand, is, according to this poll, unknown to SKDL supporters. This too is a significant fact.

People do not exactly speak badly of Helle, but not well either. His own supporters nevertheless try to see in him a sense of responsibility, candor and common sense. Most SKDL supporters do not, however, dare to agree with these judgments.

Clarifying leaders' images is common in politics as well as in the field of business. It is, nevertheless, not an entirely simple matter.

In the Taloustutkimus poll they presented the 1,014 respondents with 32 words descriptive of party leaders. They had to quite spontaneously answer the question as to which word corresponded to their own image of the person in question. The poll was conducted between 24 June and 7 July 1985, that is, very recently.

The responses were provided on forms filled out by the respondents during personal interviews; the printed sample statistically corresponds to that segment of the population from 15 to 69 years of age.

In interpreting them we should not fix our sights on the individual statements, but on the overall picture produced by them. From it we can also draw a so-called personal profile. A graphic presentation does not, however, take us very far since the profiles are after all in many respects close to one another if we omit Esko Helle's curve, which is still moving along a very low trajectory.

Thus our party leaders are fairly widely regarded as being sensible and responsible. On the other hand, a single quality of only one leader was approved of by over 50 percent of the whole nation: 58 percent of the nation feel that Kalevi Sorsa is highly regarded.

#### Impetus for "Scandal Mongering" Has Died Down

Judgments have, however, improved since July 1982 when we began to experience the zealous phases of the hunt for corrupt bosses. Particularly as concerns these four party leaders, nothing that smells very much of scandal has been reported in public these past few months, although, of course, politicians' general reputation clings particularly to party leaders.

Nor is it obvious either which qualities are negative and which positive. Must a party leader be insensitive? May he be sensitive?

Each party leader's own supporters naturally rate him higher than others do. There are, however, differences in degree of enthusiasm in one's own constituents' support; Sorsa also receives the highest ratings from his own people, whereas a fair number of Conservative Party and Center Party supporters endorse criticism of their own party leaders. SKDL supporters, on the other hand, do not yet have any very strong opinions about Helle.

#### Sorsa Rising to the Top

So Kalevi Sorsa's reputation is rising to the rank of statesman. Who knows whether insensitivity is to be interpreted as a good or a bad quality — but Sorsa is above all felt to be highly regarded, responsible, purposeful and sensible — nevertheless, also as having a sense of humor in addition to his leading qualities.

People indeed feel that Sorsa has also become more arrogant, self-important, thin-skinned and serious-minded in 3 years time — also more irritating than before in the opinion of many. On the other hand, people clearly have more confidence than before in his candor, good intentions and patriotism.

In the eyes of his own supporters Sorsa's image has been even more reinforced. He has racked up minus points chiefly as concerns his increased hypersensitivity, omniscience and tendency to change his mind often. Let us recall, for example, his reactions to the SMP [Finnish Rural Party] or Erkki Tuomioja at various times — or could it merely be that such opinions of Sorsa have become more widespread among SDP constituents than before? Women react to Sorsa slightly more critically than do men — the situation is the opposite with nonsocialist leaders.

#### Sorsa Is Insensitive for Conservatives

Farmers react to Sorsa in a particularly negative way. This is, of course, reflected in the Center Party columns, although Conservatives have a more negative attitude toward Sorsa than Center Party constituents. That is, we may imagine that Conservative farmers view Sorsa in an especially negative way.



Conservatives are particularly dissatisfied with Sorsa's insensitivity (43 percent) and programmed way of doing things — might it be reflected in government affairs? Conservatives certainly give Sorsa higher ratings than Center Party constituents do as concerns esteem for him (52 percent) — but they also often regard the SDP chairman as being self-important (35 percent), all-knowing (36 percent) and overly serious (30 percent).

#### Suominen Has a Low Profile

At the time of the last poll Ilkka Suominen was the rather new chairman of the Conservative Party. Now behind him is both the disappointment of the parliamentary elections and the municipal election victory as well as the moderate murmuring within the party. In the eyes of the nation, however, Suominen's image has not radically changed — it has perhaps diminished slightly, but it has remained very low in terms of profile.

The leader of the opposition probably recognizes that he has now risen to become the most quarrelsome party leader, whereas the last time Paavo Vayrynen overwhelmingly won that distinction. A 12-percent rating nevertheless attests to a very civilized opposition policy.

Suominen's skin is also regarded as having gotten thicker, which the "skin engineer" has certainly also recognized. On this item, to be sure, his own people only give him the same rating as the entire nation does. Perhaps, however, they feel that Suominen has endured his disappointment in the 1983 elections in a creditable manner?

#### Most Patriotic, Vayrynen Irritates People

On the other hand, in the capital district, Tampere and Turku Vayrynen's image has even diminished since the summer of 1982. In these places 46 percent feel that Vayrynen is irritating, overly serious (41 percent), self-important (43 percent) and even distasteful (20 percent).

Upper-echelon office workers rate him in somewhat the same way. It is thus as plain as day that Conservatives' judgment of the Center Party chairman is negative: irritating (44 percent), self-important (49 percent), overly serious (38 percent), childish (34 percent) and even repulsive (24 percent). Only 20 percent of the Conservatives regard Vayrynen as being sensible, 24 percent as highly regarded and 13 percent as candid.

Social Democrats have somewhat the same impression of Vayrynen as Conservatives do, but generally slightly milder with regard to the most personal traits. On the other hand, they have less faith than even the Conservatives in Vayrynen's candor; could his work within the government have produced this image?

#### Do His Own People Approve of Him?

Among his own people, however, Vayrynen has clearly improved his image. Perhaps this was of most importance to the chairman during the initial period. In the nation as a whole Vayrynen has at least managed to get rid of the impression of his argumentativeness.

In Center Party constituents' opinion, Vayrynen has certainly become more sensitive than before, but perhaps this is to be interpreted positively. His own people now regard him as being more responsible, well-intentioned, open and sensible than before as well as being a pioneer whose prestige has greatly risen.

In the Center Party too there are, to be sure, still to some extent those in whose opinion Vayrynen is prone to change his mind often (11 percent), even irritating (12 percent) -- but the great majority of his own people are now behind the chairman.

#### At Least Nothing Bad About Helle

In this poll Esko Helle's profile has not yet taken shape -- or, rather, it has taken shape in just the right way, very low, as is fitting for a cover organization leader. A different sort of image would certainly have been produced of SKP [Finnish Communist Party] chairman Arvo Aalto, although the SKP's ragged internal situation would probably have been mirrored in the results.

Perhaps Helle can be content with just the fact that nothing particularly negative is visible in him. Almost as many Conservatives (13 percent) as People's Democrats (14 percent) consider him to be patriotic. The Social Democrats believe in his patriotism the most (20 percent). Perhaps the whole concept is felt to be a bourgeois one among the SKDL rank and file?

A fourth of his own supporters, sometimes a good third of them, however, dare to see positive traits in Helle: a sense of responsibility, common sense, good intentions. About a fifth of the supporters of the other big parties are also ready to ascribe a sense of responsibility to Helle.

With respect to this and several other points as well, Conservatives take a slightly more favorable (or more unbiased) view of Helle than Center Party constituents do. Opinions of Helle, however, are widely divided as a mirror image of people's image of Suominen.

#### Poll Results

Question: On this form there are a number of different character traits and four party leaders mentioned by name. Which party leader(s) does each of these traits appropriately describe? Do not dwell on any single word for an unnecessarily long time; rather reply in accordance with your first impression.



## (1) KAIKKI VASTAAJAT

## (2) KO. PUOLUEEN KANNATTAJAT

	Esko Helle	Kalevi Sorsa	Ilkka Suominen	Paavo Väyrynen	Esko Helle	Kalevi Sorsa	Ilkka Suominen	Paavo Väyrynen
	85 %	85—82 %	85—82 %	85—82 %	85 %	85—82 %	85—82 %	85—82 %
(3) Riidanhaluinen .....	5	9	6	12	4	3	3	8
(4) Paksunahkainen .....	8	34	23	24	12	25	19	25
(5) Määrätietoinen .....	14	43	28	30	25	60	44	54
(6) Herkkä .....	8	11	5	8	5	12	7	9
(7) Moni-ilmeinen .....	9	27	16	13	9	26	12	9
(8) Lapsellinen .....	2	7	5	9	3	2	3	4
(9) Kaavoihin kangistunut ..	11	24	21	22	13	13	14	11
(10) Vastuuntuntoinen .....	19	42	26	26	21	67	44	50
(11) Päättämätön .....	9	8	6	10	6	8	4	5
(12) Ylimielinen .....	4	21	16	20	12	5	9	12
(13) Isällinen .....	13	22	11	21	13	36	18	38
(14) Luontaanäyöntävä .....	6	11	11	11	8	4	7	2
(15) Hyvätahtoinen .....	17	28	16	22	13	48	26	48
(16) Isänmaallinen .....	16	34	21	48	39	51	27	76
(17) Välinpitämätön .....	8	9	9	8	6	4	5	4
(18) Edelläkävijä .....	6	21	11	8	5	36	20	12
(19) Etäinen .....	31	13	14	25	15	17	19	17
(20) Vilpittöns .....	12	19	10	16	12	39	18	36
(21) Umpimielinen .....	5	10	8	8	5	6	5	6
(22) Arvostettu .....	14	58	36	25	18	73	51	43
(23) Yksisilmäinen .....	7	7	5	9	4	3	2	7
(24) Turhautärkeä .....	6	24	15	22	11	8	10	13
(25) Ailahteleva .....	7	12	10	11	6	9	5	8
(26) Tynpeä .....	6	13	12	12	7	5	7	5
(27) Kaikkittietävä .....	6	28	13	11	9	20	12	4
(28) Herkkänahkainen .....	8	14	7	8	5	16	6	8
(29) Rahvaanomaiainen .....	10	11	11	9	7	9	12	7
(30) Järkevä .....	20	41	26	28	25	67	43	54
(31) Tosikko .....	11	23	16	20	11	12	9	16
(32) Huumorintajuinen .....	9	27	19	22	13	53	31	41
(33) Voimakas .....	12	34	18	24	18	46	23	40
(34) Ärsyttävä .....	9	22	15	15	9	7	6	9

Key:

1. All respondents.
2. Supporters of the party in question.
3. Quarrelsome.
4. Insensitive, thick-skinned.
5. Purposeful.
6. Sensitive.
7. Many-sided.
8. Childish.
9. Set in his ways, programmed.
10. Endowed with a sense of responsibility.
11. Indecisive.
12. Arrogant.
13. Paternal.
14. Repulsive.
15. Well-intentioned.
16. Patriotic.
17. Indifferent.
18. A pioneer.
19. Distant.
20. Candid, open.
21. Uncommunicative.
22. Highly regarded.
23. One-sided.
24. Self-important.
25. Prone to change his mind.
26. Distasteful.
27. All-knowing.
28. Hypersensitive.
29. Vulgar.
30. Sensible.
31. Overly serious, humorless.
32. With a sense of humor.
33. Powerful.
34. Irritating.

Voters Unfamiliar with Helle

Helsinki UUSI SUOMI in Finnish 14 Jul 85 p 2

[Editorial: "Leaders' Reputations"]

[Text] A survey of party leaders' reputations, their images, can, of course, be an indication of an exaggerated emphasis on personalities in politics as well as in journalism. However, citizens to a great extent identify a party with its most conspicuous leaders. And why not — it is people who decide on policy, even major policy. Besides, placing a leader in the limelight clarifies responsibility relationships.

There are also reasons of current importance for shedding more light on party leaders' reputations. A person, not platform position papers, is elected

president. With all its ups and downs, Mauno Koivisto's accession to the presidency demonstrated that a president cannot be elected in cabinets; he must enjoy widespread respect and esteem.

Taloustutkimus Oy's poll of party leaders' images conducted on behalf of UUSI SUOMI has brought out many interesting features, although, of course, so broad a survey should not be mechanically interpreted. And from the standpoint of presidential elections, for example, many potential candidates, starting with the president now in office, were missing from it.

The poll indicated that Kalevi Sorsa's reputation has risen to the rank of statesman and that Ilkka Suominen's personal image has remained pallid, if not negative, in the eyes of the people. New SKDL chairman Esko Helle is, on the other hand, still completely unknown to the general public and even to most of his party's supporters.

In the light of this poll, perhaps most problematic is Paavo Vayrynen's situation. At the time of the last poll he was dragged into the public eye in connection with the fall 1981 presidential election campaign and the incipient Jalasmokki affairs. In view of this, a very controversial reputation was understandable.

Later, Vayrynen withdrew from the petty maneuvering of day-to-day politics, laying emphasis on his role of experienced foreign affairs minister. He has indeed succeeded in gaining the confidence of his own party's supporters and otherwise improved his image in staunch Center Party districts.

However, in the big cities of the South Vayrynen's image is still very controversial among upper-echelon office workers and Conservatives -- an it has in part even diminished since 1982. Nearly half of the office workers, big city residents or Conservatives -- very often these three groups, of course, merge -- consider Vayrynen to be an irritating, self-important, overly serious person. Favorable opinions of him are, on the other hand, scantily endorsed.

In Center Party circles they certainly say that the news media of the South have created a negative image of Vayrynen. Such a lasting and tenaciously surviving poor image cannot, however, be created out of whole cloth.

Since the Conservatives' opinions of Vayrynen are so negative, it is difficult to imagine his becoming a person who will unite the nonsocialists, at least not during the next few years. Thus Sorsa's top status in the generation of politicians that will follow Koivisto is being heightened.

People do not react negatively to Ilkka Suominen, but even for many Conservatives he has remained distant. It does not, however, pay for anyone to strive for an image that is completely foreign to himself; Ilkka Suominen is neither a free-and-easy back-slapper nor a stirring demagogue, but he may be an effective party general manager.

In the light of this poll, however, it would be worth Suominen's while to recognize the problems of his personal image and use more to his advantage other conspicuous Conservative models like Raimo Ilaskivi or Pertti Salolainen. He should not pay too much attention to who the unreserved supporters of the chairman are, to who a former or even a future contender may be.

And in the light of this poll, the value of Harri Holkeri's personality to the Conservative Party is emphasized.

11,466

CSO: 3617/143

POLITICAL

NORWAY

#### LABOR PARTY NEWSPAPER COMMENTS ON POLL RESULTS

Oslo ARBEIDERBLADET in Norwegian 23 Jul 85 p 4

[Editorial: "In Tune with the Voters"]

[Text] If the election results in September are in line with the latest political opinion poll from Norwegian Market Data the Willoch government will continue to run the country as long as it accepts the position of functioning at the mercy of the Progressive Party. A few years ago such a thing would have been inconceivable. As we head into the election this fall we can simply state that Kare Willoch and the Conservatives along with Kjell Magne Bondevik and the Christian People's Party and Johan J. Jakobsen and the Center Party have accepted Carl I. Hagen and the Progressive Party as part of a future government base.

Having said that, we hasten to remind our readers that a poll is not the same as an election. If anything is certain it is that this fall's election results will not be identical with the June poll from Norwegian Market Data. Such polls cannot be interpreted directly. The most interesting and most instructive course is to study the trends they express. And if we do that, it is clear that the distance between the blocs behind the two government alternatives is so narrow that the election outcome must be regarded as completely open. Those who want a government change should realize that there is every chance that this could happen.

In this context it is worth noting that one of the people responsible for the Norwegian Market Data polls, Reidar Haugen, has pointed out the uncertainty associated with the treatment of the so-called raw figures from the survey. He stated that it was "fairly certain" that the poll shows the minimum figures for the Labor Party and the maximum figures for the Conservative Party. Therefore it is not unrealistic to assume that the Labor Party is several points over and the Conservatives several points under the 37.8 percent and 31.5 percent the poll indicates for these parties. This is not said as a consolation but rather as an inspiration for all who feel that the country needs new people in government offices as the campaign draws to a close. A further inspiration is the fact that the voters recognize the need for Labor Party policies in the areas most important to them. This was shown by another poll conducted for AFTENPOSTEN by Gallup/NOI [Norwegian



Opinion Institute. While around half the voters had greater confidence in Labor Party policies on social security and fairness, a better health system and shorter lines for hospital admissions and better hospital service and care for the elderly and the handicapped, only a little over 30 percent felt the nonsocialist government is best equipped to solve problems in these areas. These three policy areas are also those the voters ranked as most important. They are followed by opportunities for young people to get an education and a job, Norway's freedom and work for peace and disarmament. In these areas too the voters have most confidence in the Labor Party.

#### Political Barometer

Question: Would you vote if we had an election tomorrow? If the answer is yes, which party would you vote for? Interviews conducted from 17 June to 6 July 1985. Number of interviews: 1263. Of these 1024 answered the question on party preference. Poll conducted by Norwegian Market Data, Inc.

#### SVARFORDELING:

SVARSKORREKTUR:												
	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)	12)	
	A	H	KR.F.	SP	SV	V	FRP	DLF	NKP	RV	ANDRE	
1) AR	%	%	%	%	%	%	%	%	%	%	%	
13)Valg	81	37,1	31,8	9,3	6,6	5,0	3,9	4,5	0,6	0,3	0,7	0,2
14)Valg 83	»	38,9	26,4	8,8	7,2	5,3	4,4	6,3	0,7	0,4	1,2	0,3
August	»	39,6	28,0	8,5	5,2	6,0	4,1	7,1	0,4	0,3	0,8	0,1
September	»	39,9	29,1	8,9	5,6	5,4	4,5	5,7	0,2	0,3	0,5	0,0
Oktober	»	39,3	28,5	8,5	5,1	6,0	3,4	6,4	0,7	0,3	0,7	0,5
November	»	39,6	29,4	8,6	6,0	5,1	3,7	5,9	0,3	0,3	0,7	0,4
Desember	»	38,8	29,2	8,2	6,6	5,6	4,4	5,4	0,4	0,3	0,8	0,2
Januar	85	38,1	30,4	8,3	6,0	5,1	3,7	7,0	0,5	0,4	0,5	0,0
Februar	»	37,7	30,9	8,7	4,7	5,2	4,1	6,3	0,4	0,9	1,0	0,1
Mars	»	37,6	31,2	9,3	6,5	5,1	3,9	4,4	0,6	0,3	0,8	0,3
April	»	36,7	33,6	7,7	6,1	4,8	3,5	5,8	0,3	0,2	0,9	0,4
Mai	»	38,3	32,1	8,4	5,1	5,2	4,3	4,6	0,5	0,5	0,6	0,4
Juni	»	37,8	31,5	8,4	5,8	5,4	3,7	5,3	0,7	0,4	0,8	0,2

Key:

- |                             |                            |
|-----------------------------|----------------------------|
| 1. Year                     | 8. Progressives            |
| 2. Labor Party              | 9. Liberal People's Party  |
| 3. Conservatives            | 10. Norwegian CP           |
| 4. Christian People's Party | 11. Red Election Alliance  |
| 5. Center Party             | 12. Other parties          |
| 6. Socialist Left Party     | 13. 1981 Storting election |
| 7. Liberals                 | 14. 1983 election          |

AFTENPOSTEN wriggled out of the embarrassment associated with the newspaper's own voter survey by claiming that a nonsocialist government is "the best guarantee for the economic growth on which the welfare state depends." This is not true. The best guarantee is connected with the business action program the Labor Party has presented. It will provide a basis for a somewhat stronger economic growth and a needed renewal of Norway's private business sector.

6578

CSO: 3639/153

POLITICAL

NORWAY

DOMESTIC, FOREIGN POLICY ASPECTS OF 'CONSERVATIVE WAVE' ANALYZED

Oslo AFTENPOSTEN in Norwegian 10 Aug 85 p 3

[Commentary by Lars Hellberg]

[Text] "Everything is going much better! It is so much better that one is tempted to put it even more strongly and quote Trygve Lie: 'Everything is working out for this government.'"

It was not a tedious task for Hans Henrik Ramm to write about the conservative wave, an unlimited Norway and the Willoch government. Ramm also possesses all the qualifications needed to analyze the political correlations of what has happened in recent years.

In Ramm's correct and independent summing up, although he is far from being neutral as far as political parties are concerned, the picture looks like this at a point when we are hopefully looking forward to 4 more years with Kare Willoch as prime minister:

The first 4 years have been a period of increased personal freedom and restored economic progress.

Important steps have been taken to open up society in the sense that unnecessary obstacles have been removed, allowing people to develop fully and to cooperate as much as they want to in many different ways.

Local radio and television broadcasts have been opened up and there are greater opportunities to see foreign TV programs.

Other monopolies, such as the Telecommunications Agency, have been curtailed. It has become easier to set up new businesses, buy stocks or purchase property. It has become safer to be an owner.

The black housing market has been abolished. It has become easier to finance new homes and housing has become a more secure area for saving and making new investments.

There is more investment in new technology.

More emphasis has been placed on defense, education, communications and out-lying businesses. There has been a chance to greatly expand oil activities, creating opportunities for all parts of the country and bringing Norway into the middle of the development of the world's newest technology.

Many people will disagree that all these things can be ascribed to the power shift in 1981. And from a purely theoretical point of view one might argue that the Labor Party could have shown a greater ability to think along new lines if it had been in a position of power than it displayed in the opposition role.

#### More Important

But the most important results of 4 years of nonsocialist rule under Conservative leadership lie on another level:

Price increases are going down. Inflation is going down. Taxes are going down. Production, growth and investments are going up.

And just as important, though less visible, Norway has come into focus on the international political scene. We are important as oil exporters, as Europe's major gas supplier, as one of the most loyal partners in NATO, as the world's most generous nation when it comes to aid to developing countries and as a nation that can offer advanced technology.

#### Not Good-Natured

Ramm's point about our NATO loyalty is indisputable but it is often twisted in the political debate to the effect that Norway under Willoch has become the "nice boy" in the NATO classroom. Ramm has been (accidentally?) in positions where he has been able to assess this type of vulgar argument. With regard to relations with the United States he sketched a valuable and informative picture of how Willoch described the realities of the situation to the Americans during the conflict over the Siberian pipeline.

I myself was able to see from a greater distance, as a correspondent in the United States, the respect the anything but good-natured Willoch won from President Ronald Reagan and others during the debate. Unfortunately Ramm has been too concerned about keeping his book from being a kind of "autobiographical book of leaks." This means that in this context, where he is very familiar with what went on, he can only reveal the facts to a certain extent. The book is easy to read, informative and thought-provoking. But Ramm is more cautious in writing about his chief than Willoch deserves. The prime minister would not have been hurt if the author had been a little less careful.

With this reservation there is every reason to recommend the book. Ramm's starting point for this contribution to contemporary history is self-evident. The title could not have been anything but "Everything is so Much Better Now."

## Optimistic Wave

The 1983 TV theme was intended as a tiresome piece of flippancy, but it was allowed to develop into one of the best political slogans we have seen in this country in the last 50 years. And this is not a question of Lie's now classic remark when Crown Prince Harald was born just after Johan Nygaardsvold assumed government power. No the optimistic wave the Willoch government is enjoying today can only be compared with developments in the wake of the Labor Party's demand for "jobs for everyone."

It is a tragic irony from the opposition's point of view. When we look at unemployment, which seemed to be the Labor Party's key issue for a long time, the figures are now dropping rapidly. There is scarcely any parallel to the story about "everything going so much better now." In short the Conservatives have received full measure from a slogan that was wished on the party by the authors of a show who did not have kindly intentions toward the party. The explanation is simple. As Ramm points out, the program was really entertaining--and it hit the sense of irony of modern Conservatives. And what is sauce for the goose is sauce for the gander. Consequently there is little doubt that a great deal is "working out" for this government.

We find the ultimate proof in the Labor Party's election campaign which is largely based on the statement that the economic upturn is not due to the efforts of the government and that it will not last. Now we should not forget that governments have lost past elections on the basis of slogans along the lines of "making good times better." But that was in the happy 1960's when continual growth was taken for granted.

## New Situation

The situation is different today. We have seen how quickly things can go wrong and the kind of problems we have to deal with. And most people realize that we must gain control over public spending in order to do well. The Willoch government came into power at a time when people realized that the demand for moderation was not simply one that could be made of everyone else.

The straight Conservative government that resulted from the failure of the Christian People's Party to seize its opportunity until 2 years later got a lot for nothing. Kare Willoch quickly turned out to be the right man in the right place at the right time. But to give him his due one should also point out, as Ramm does, that Willoch did not hesitate to provide a proper foundation for the necessary tax reform.

When it comes to tax policy, Norway's political history is very convoluted. When Willoch took office we found ourselves in a vicious circle, partly as a result of the fact that former Finance Minister Per Kleppe lost a good deal of the battle against party colleagues who were hungry for even more taxes and fees. The high progressive rates, which affected a growing number of people as time went by, forced wage earners to demand outrageously high nominal wage increases just to safeguard their standard of living. At the



same time they opened the way to massive tax evasions through moonlighting and other abuses.

#### Not Solved Yet

The problem has not been solved, far from it. But today we are in the midst of what might be experimentally called a benevolent cycle. The tax breaks that have been pushed through against the resistance of both the opposition and the other two government parties have provided a basis for an entirely different kind of moderation in wage contracts, given the business sector fresh stimulation and produced an inflation that can be dealt with.

Ramm is justified in calling the new orientation of tax policy a historic breakthrough. This is most clearly documented by the middle parties which now feel obliged to at least call for routine adjustments of the progressive rates and deductions in order to prevent what is often called an unintentional tax increase.

Ramm is equally on the mark when he points out that the middle parties, which have not always been easy to deal with on tax policy matters, do not hesitate today to share the credit for the upturn that is based on the new orientation. While the rain falls on Willoch, the rest of us have to put up with some of the raindrops running off on the guilty and innocent alike.

The author takes up all this and more. As we know, he is a somewhat confusing mixture of dedicated Conservative politician and independent observer, although no one would think of accusing him of being neutral. He makes no secret of his sympathies but his reflections from inside government circles should cause everyone to stop and think.

6578

CSO: 3639/152

POLITICAL

NORWAY

JUSTICE MINISTRY OFFICIAL: SOVIET OBSERVING SVALBARD RULES

Soviet Consul Defends Behavior

Oslo ARBEIDERBLADET in Norwegian 5 Jul 85 p 7

[Article by Labor press correspondent Knut-Erik Mikalsen]

[Text] Barentsburg--The Russian bear is practically tamed. That is the official Norwegian assessment of relations between Norway and the Soviet Union on Svalbard. The Russians respect Norwegian sovereignty over the islands and the Soviet Union is not doing anything that conflicts with the Svalbard Treaty.

The man who represents the state in all the aspects of administering Svalbard, Justice Ministry undersecretary Hans Olav Ostgard, said:

"It is our definite impression that the Russians are meeting conditions for their continued presence on the island, including the ban on military activities and military installations."

Idyllic

Svalbard district governor Carl A. Wendt said:

"We have excellent relations with the Russians. Our inspections of the Russian settlements in Barentsburg and Pyramiden have not revealed conditions that conflict with the Svalbard Treaty. Disagreements can arise over the interpretation of details in the regulations issued by the Norwegian authorities, but the Russians follow them to the letter anyway after making a protest in principle."

But a good many of the Norwegians living on Svalbard regard the Russian presence with a certain amount of skepticism. And the skeptics do not refrain from pointing out that the Russians have twice as many workers as the Norwegians while producing only half as much coal. Many also react strongly against the Russian unwillingness to allow Norwegians into Barentsburg and Pyramiden. What are the Russians trying to hide?

## Honest

But all suggestions that the Russians are conducting illegal and concealed activities under cover of mining coal on the island are dismissed out of hand by official Norwegian sources. Governor Wendt said:

"We have no reason to believe that the Russians want to conceal any of their activities from us. And we have no reason to think that they have military installations on the island. We can say this because we carry out an inspection of the Russian community at least once a week."

The Russian consul on Svalbard is also quick to assure people of the honest Soviet intentions on Svalbard when he is invited to take part in a brief conversation.

## Assurance

"We respect Norwegian sovereignty on Svalbard completely. And it is not correct that we have twice as many workers as Norway who produce half as much coal as the Norwegians. In contrast to the Norwegians we supply all our own food. We have people working on farms and in greenhouses," the Russian consul emphasized.

Undersecretary Hans Olav Ostgard of the Justice Ministry's Arctic section said that relations with the Russians have improved considerably in recent years. He explained this by saying that the Russians had gradually accepted the increased Norwegian activity on the island.

## Fewer Protests

He said that the Soviet Union has realized that the Norwegian involvement has increased naturally as a result of the increased interest in Svalbard in several areas: oil explorations, research, metal studies, fishing and tourism.

"In the past we received a number of protests from the Russians, especially due to the visits of Norwegian naval vessels. The Russians thought these calls violated the Svalbard Treaty's ban on military activity on the island. Norway dismissed this by saying that the navy ships were on regular voyages in Norwegian waters. Evidently the Russians have gradually accepted the fact that we do not have concealed motives behind these visits. At any rate there are now few protests against these visits," Ostgard said.

## Energy Cooperative Venture Backed

Oslo ARBEIDERBLADET in Norwegian 18 Jul 85 p 7

[Text] The Industrial Affairs Ministry has taken a positive stand on the cooperative agreement that has been drawn up between Norsk Hydro and the

Great Norwegian Spitsbergen Coal Company concerning oil and gas exploration on Svalbard. The ministry is also considering allowing Storting to issue the final approval of the agreement.

Undersecretary Kjell Hanssen of the Industrial Affairs Ministry disclosed this information to the Labor press. The agreement, which was reached last Friday, gives Hydro a monopoly on mapping profitable deposits of oil and gas in the area assigned to the other company on Svalbard. The agreement will last for 10 years and profitable finds will be extracted by the Great Norwegian Spitsbergen Coal Company.

#### Positive

"We were familiar with the main outlines of the agreement before it was signed, but we did not give Great Norwegian any prior assurances of state approval. We must look at the details of the agreement first. But the basis for our evaluation is a positive attitude toward this cooperation which we hope will reduce Great Norwegian's need for state subsidies," said Kjell Hanssen.

The ministry will also consider submitting the agreement to Storting for final approval and Hanssen said that the state is prepared to make a quick decision on this matter. Therefore he thought the agreement might be presented to Storting during its fall session.

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POLITICAL

SWEDEN

# PAPER VIEWS ECONOMIC CONSEQUENCES OF SDP CAMPAIGN PROMISES

Stockholm DAGENS NYHETER in Swedish 11 Aug 85 p 2

[Editorial: "What Is Hidden Behind the Manifesto?"]

[Text] At Sunday's campaign rally in Sodertalje Olof Palme reminded his audience of how in 1982 with the support of the party's crisis program he had pleaded for "less belt-tightening and more elbow room" in economic policy. But few people suspected then that the elbow room would be created with the help of a big devaluation that looked more like belt-tightening in the short run.

The main importance of the crisis program was to demonstrate Social Democratic aggressiveness and innovative thinking in relation to the former sterile opposition policy. But the program did not play a dominant role after the election victory and in some cases, for example with regard to housing construction, it was not followed at all.

The election manifesto the Social Democratic Party leadership approved Friday afternoon also seems to have a limited life expectancy. The aim of the manifesto--and of what we have seen so far of the Social Democratic election campaign--seems to be an attempt to obtain an open mandate for the next 3 years with the help of the trust they have won after 3 years of ruling during times of economic prosperity. The program, like Olof Palme's speeches, makes retrospective comparisons between the party's own accomplishments and the shortcomings of the nonsocialist governments a prominent element in the campaign. The main direction of policy in the next 3 years is said to be the fulfillment of "the policy of the third alternative."

There are few campaign promises in the manifesto and those that can be found are carefully formulated. Expanding child care to the point where it covers the need completely will be accomplished by 1991, over two election periods in other words, without saying anything about the tempo of the expansion. Parental insurance will be expanded "at the rate permitted by the economy." All young people will be offered placed in academic high schools, but this will not involve large extra costs since most people in that age group are already entitled to classroom space.



A binding and costly promise, on the other hand, is the pledge to restore partial pension payments to 65 percent instead of the current 50 percent, in this election period, which would be financed through an increase of around 0.2 percent in employer contributions. Sten Andersson and Olof Palme have long been alluding to partial pensions without directly committing themselves; now a promise has been made but with the reservation from Kjell-Olof Feldt that he does not know at what point during the election period the extra purchasing power should be released.

It would cost considerably more--or at least require greater rearrangements in the budget--to try to improve the economy of families with children instead. But last week's debate, set off by the estimates presented on TV News, showed that there is a need to do something here while at the same time this is a weak point in the otherwise target group-oriented Social Democratic campaign message. Eager as they were to restore the partial pension compensation level that was reduced during the nonsocialist government period the restricted leeway for reform did not allow even a small improvement for the hard-pressed families with children.

However the Social Democrats are fully aware of the importance of environmental issues in this year's campaign. There is a welcome promise in the election manifesto to ban further use of asbestos and a definite goal of cutting the use of herbicides and pesticides in agriculture in half over the next 5 years. But with regard to catalytic purification of automobile exhaust systems the Social Democrats still want to wait until 1988 in spite of the fact that the technology is available and that Sweden could not get the EC countries to go along with the delay. Once again an unwillingness to change decisions that have already been made has determined policy.

But regardless of the significance assigned to them these campaign promises say little about what the coming 3 years would be like under continued Social Democratic rule. The fundamental question is still whether Sweden will be able to come closer during the election period to solving the balance problem that could deprive political decision-makers of any freedom of action. The fact that the Palme government has been able to reduce the deficit in a period of prosperity with the help of devaluation tells us nothing about its capability and readiness to act in leaner years. And anyone who expects to find an answer in Kjell-Olof Feldt's recently issued work, "The Third Way, a Policy for Sweden," is bound to be disappointed.

The Social Democratic Party leadership does not lack either insight or forcefulness. Therefore one must conclude that there is another election manifesto, at least in the minds of Palme, Feldt and a few others. It would be interesting to read their thoughts when they run around the country during the next month preaching the gospel that all we need to do is keep on the right track.

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POLITICAL

SWEDEN

CARL BILDT: NONSOCIALIST VICTORY WOULD END VIETNAM AID

Stockholm DAGENS NYHETER in Swedish 16 Jul 85 p 9

[Text] "A nonsocialist government would also bring with it changes in foreign policy. One of the most important changes in this area would be to establish a plan to quickly terminate the extensive aid to Vietnam." This statement was made by parliamentary representative Carl Bildt during a meeting in Visby last Monday.

"The 5-year agreement concerning aid to a forest industry project in Bai Bang which the government just concluded, even against the advice of Sidas, is indeed an attempt to restrict the freedom of action of an expected nonsocialist government. But this attempt will not succeed. A nonsocialist government feels it has the complete freedom to basically renegotiate any agreement now entered into by the Social Democrats," Bildt maintained.

8952

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POLITICAL

SWEDEN

## GOVERNMENT ACCUSED OF CONCEALING BAI BANG RIGHTS VIOLATIONS

### Aid Recipient's Responsibilities Asserted

Stockholm SVENSKA DAGBLADET in Swedish 12 Jul 85 p 2

[Editorial: "Bai Bang Again"]

[Text] Is the Swedish Government's aid policy merely credulous? Or has it once again shown evidence of weakness in its dealings with the communist regime in Hanoi?

If neither of these questions can be answered in the affirmative then the situation is even worse. Then the government has demonstrated a nasty, dictatorial attitude and total arrogance toward the Riksdag by extending aid to the scandalous forestry project in Vietnam for 5 more years.

More than 2½ years ago there were alarming reports that Vietnamese were being ordered to do forced labor on the bamboo harvests which were to supply Sweden's expensive aid project at Bai Bang with raw materials. That time scant attention was paid to the reports. The then Minister of Industry Roine Carlsson believed that it was an internal Vietnamese question what methods were used to get raw materials.

That was a cynicism which did not last long, especially since personnel from SIDA [Swedish International Development Authority] confirmed that the Hanoi regime did not mind using slave labor to ensure that the forestry project produced some profit, however meager.

In February Foreign Minister Lennart Bodstrom told the Riksdag that the government should use all available means to try and get the Hanoi government to correct the unsatisfactory state of affairs at the forestry project.

When a new agreement was to be signed to replace the one which expired on 31 May, SIDA recommended that an agreement be signed for only one year for the project. In this way Sweden would be able to put pressure on the Vietnamese Government to correct the unsatisfactory state of affairs and make such reforms that in the future could be used as a defense for the Swedish aid project which was questionable from the outset.

SIDA has had broad powers in Vietnam ever since the project began. The recommendations made by the aid organization's experts were neglected by the government. The new agreement on the forestry project will also run for 5 years.

The foreign minister's explanation is that it is most practical this way, because the government still has so many matters to attend to, cannot be taken seriously. Perhaps it is nothing more than a desperate attempt by the foreign minister to save what he can for his own sake, since he is once again being disavowed by more powerful forces within the government which want to have total control of our foreign policy.

If Lennart Bodstrom himself is jointly responsible for the decision to sign a new 5-year agreement, this means that he knowingly hoodwinked the Riksdag.

Now the Foreign Ministry is claiming, as is the new head of SIDA, that "in practice" it is a one-year agreement, since the government has the possibility of reconsidering the aid if it turns out that the Vietnamese do not rectify the unsatisfactory conditions. It may be that this theoretical possibility exists. But it is tempting for the Vietnamese to see the 5-year agreement as evidence that Sweden is not so concerned about the situation. They must also be reassured that difficulties remain for an eventual nonsocialist government to continue to grant aid to a country which refuses to respect human rights and which, despite its difficult economic situation, continues to maintain a costly army of occupation in Kampuchea.

We do not ask that Vietnam create entirely satisfactory conditions for the workers on the forestry project in a few months. But it is imperative that those receiving aid do not make people live in serfdom, and completely neglect that which in all political systems should be common human dignity.

#### Women Main Victims

Stockholm SVENSKA DAGBLADET in Swedish 14 Jul 85 p 2

[Commentary by Olof Ehrenkrona: "Help for the Oppressed"]

[Text] Three years ago it was disclosed that the forest workers at the Swedish aid project at Bai Bang were forcibly recruited. The immediate official Swedish reaction was to tone down the disclosure. Roine Carlsson, who visited Hanoi in November, explained in a press conference that Sweden had no reason to take a position on how the Vietnamese solve the problem of recruiting labor forces.

He maintained that it was an "internal Vietnamese concern" and added:

"The main thing is that the Vietnamese now realize the importance of having a functioning supply of raw materials for the project. How they solve it is their business."

On 6 December Olof Palme explained that there was "no verification of that," meaning the forced recruiting. He waved aside the questioner by saying that the Swedish Crisis Commission should have done something similar in 1943.

Lennart Bodstrom said in the Riksdag that "information from the project and the work leaders in Bai Bang and from the Swedish Embassy in Hanoi does not support these claims," and added that "the origin of these rumors is unclear."

Bodstrom's reference to Swedish representatives in Vietnam is of special interest. Several days later DAGENS NYHETER published an article by Claes Leijon, a SIDA economist stationed in Hanoi.

Leijon saw no decisive difference between Swedish labor market policies and the Vietnamese. According to Leijon the forest workers were recruited by using "mobility-stimulating measures" similar to our own.

He did not think it was especially noteworthy that families were forced to live apart for 345 of the 365 days of the year. "That picture is perhaps not entirely unknown in Sweden," said the SIDA economist.

Naturally Leijon's article could have been an expression of ordinary naivete and lack of suspicion. The Swedish Embassy in Hanoi and SIDA's aid office could simply have been deceived by the Vietnamese authorities.

But it was not as simple as that. There was information available to confirm the reports of forced labor. In a reply to Leijon's article the former chief of information at Bai Bang, Jan Aschan, gave a directly opposite picture of conditions in the forest labor camps.

Why did Swedish authorities choose to silence, defend and try to cover up the information? Why had they neglected a situation which could not reasonably have been unknown to the project leaders and SIDA's aid office? Why did they not long ago investigate working conditions at the largest Swedish aid project ever?

Even if the debate in Sweden has finally forced SIDA to investigate the complaints, it is wrong to say that the work is proceeding rapidly. It was more than 2 years before SIDA found out about the situation.

Thus for 2 more years people were forced to move to the camps, 2 more years under disgusting living conditions for these people totally deprived of the most elementary human rights.

It was 2 years of Swedish aid activity in Vietnam during which not a thing was done to correct the unsatisfactory conditions. Two more years of Swedish aid funds being used literally to finance oppression.

In January of this year came the report from consultants Lars-Erik Birgegård and Katarina Larsson. The information on forced labor was essentially



confirmed. Seventeen thousand Vietnamese--mostly women--were taken from their families and ordered to the camps under the threat that they would otherwise be sent to reeducation camps.

Living conditions were miserable, food was insufficient and elementary things such as mosquito nets and female sanitary supplies were absent.

Bodstrom went back to the Riksdag to defend himself. He succeeded--entirely unjustly, since his answers were vague, self-justifying and intended to smooth things over--in creating the impression that despite everything the government expected to get to work on the question.

The rest became known during the week. The government rolled over SIDA and signed a new 5-year agreement with Vietnam.

Just imagine that what is now happening in Vietnam had happened in an aid-receiving country which did not belong to the Socialist family.

Is there anyone who seriously believes that the government's instinctive reaction in that case would have been to tone down the disclosures, that the authorities would then have taken 2 years to confirm the scandalous conditions and that the government, on top of everything else, would have renewed the aid agreement with some tactful hints about improving working conditions? Naturally not.

The handling of Vietnam aid in general and the question of forced labor in particular shows the blind spot which exists in all forms of socialism when it comes to fundamental human rights.

Also the most basic rights are worth nothing when confronted with the state's or the party's demands for power. Swedish social democrats overlook the aggression in Vietnam because they sympathize with the Vietnamese state and because the leadership is considered, as is every leadership in a socialist society, to know what is best for the people.

The debate about Bai Bang shows this phenomenon so clearly. The most amazing thing about the whole affair is that the two cabinet ministers who were directly confronted with the question have both been distinguished leaders of trade unions.

Could there possibly be a more obvious position for a union leader to take than to fight forced labor with all his might? But Roine Carlsson, former chairman of the Paper Workers Union, sounds like a paper mill owner from the 1800's when he says that the most important thing is that the raw materials reach the factory.

And Lennart Bodstrom, former chairman of TCO [Swedish Central Organization of Salaried Employees] believes that the most important thing is that the forced labor is not for life (!).

With both of these gentlemen it is clear to us that union rights are light-weight in comparison to the extra burden it would be for the Swedish Government to renegotiate the agreement with Vietnam in one year. And they do not weigh heavier than the loss of prestige that would result from breaking off Vietnamese aid.

Tomorrow the UN Conference on Women will begin in Nairobi. It culminates 10 years of work in the UN to strengthen the status of women. Most of those who are ordered to cut bamboo in the jungles of Vietnam are, as reported above, women.

One can assume that we Swedes in Nairobi are going to make a great display of our equality laws and our equality ombudsman. With endless understanding and benevolence we will consider the problems of underdeveloped countries on women's rights.

We will powerfully attack unsatisfactory conditions in other countries. Swedish meddlesomeness will surely celebrate new triumphs. But perhaps a certain caution could be recommended for the Swedish side. Because how would it feel if the delegates from countries such as Norway, Iceland, Denmark, West Germany, France and Great Britain, all recognized democracies, took up the question of Sweden's financial support of forced recruiting of female bamboo cutters?

It would not be a pleasant conclusion to the 10 years of women's rights for us. But it would be a justified drubbing.

Despite everything it is ourselves who chose to allow ourselves to be governed by hypocrites.

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POLITICAL

SWEDEN

LEFT, RIGHT POLARIZATION TREND REINFORCED BY CAMPAIGN TACTICS

Stockholm DAGENS NYHETER in Swedish 11 Aug 85 p 9

[Comment by Sven Svensson: "Parties Vie for Million Undecided Voters"]

[Text] The election on Sunday 15 September is a choice between a Social Democratic government supported by the Communist Left Party and a nonsocialist government dominated by the Conservatives. More than a million undecided voters will determine the final outcome of the struggle for government power. Especially undecided are many women under 50 and men under 30.

All the bridges toward a broad political consensus across the sacred bloc lines have been torn down for the foreseeable future, even if the nation is destroyed as a result. Because of the sharp division into blocs the political mudslinging and the hunt for new "affairs" will dominate the political scene after the election. And that is true whether the prime minister this fall turns out to be Olof Palme or Ulf Adelsohn.

The philosophy of the Social Democrats has long been never to negotiate with VPK [Communist Left Party]. Three or four written agreements between the Social Democrats and VPK during the last 3-year election period broke that pattern.

If the fall election gives the socialists a majority in Riksdag the trend toward a socialist bloc will be reinforced. Many times that is the only chance a Palme government has of gaining parliamentary approval for its proposals.

VPK's key role will be dramatically strengthened if the election results produce more nonsocialist than Social Democratic members of Riksdag. VPK would then have to vote for the Social Democratic measures each time, otherwise the nonsocialist opposition would win.

In that case VPK's price for serving as a support party for the Social Democrats would increase substantially. The VPK group is sharply divided on the issue. Party leader Lars Werner has already had to fight tough battles to win approval for his agreements with the Social Democrats.

Some VPK people have even asked for government posts. A popular front government of Social Democrats and communists would be a definitive break with Swedish political tradition.

The Social Democrats got off to a good start. Ever since the first of the year poll figures have risen for them. The campaign theme that Sweden is on the right track has had an effect.

The election strategy has also been planned correctly. In the spring the Social Democrats zeroed in on the Conservative demand for a political change in the system via heavyhanded pruning and privatization. A calculation showed that an ordinary family would lose 10,000 kronor as a result of the change in the system in 1986 alone.

The campaign had three aims: to increase Social Democratic mobilization, to prevent voters from going over to the Conservatives and to alarm Center and Liberal sympathizers by pointing to the risk of social cuts.

These tactics succeeded. The Center Party immediately abandoned the demand for a waiting period for health insurance and stressed in its election manifesto equality, the welfare state and a policy in the interest of all the people. The election manifesto was a protest against the Conservative-inspired change in the system that would benefit the more wealthy members of society.

Even Bengt Westerberg became nervous. He said in Almedalen that the Liberal Party would never support or cooperate with a government that wanted to eliminate welfare.

Westerberg has been denounced by Conservatives for this declaration.

The Conservatives were poorly prepared for the Social Democrats' general attacks and Ulf Adelsohn has complained bitterly several times that Olof Palme is "telling lies" about the biggest opposition party.

The fact remains that when the Social Democratic propaganda machine got up steam the Conservatives drew in their horns. The demand for a change of policy was changed to general talk about changes in the system and at the election rally in Sundsvall last Sunday Adelsohn retreated even further and spoke only of using common sense in our policies.

The change is typical of Conservative tactics. First a radical move and then a hasty retreat when the voters become aware of the effects this would have. A change in the system is not possible in a parliamentary democracy. Only a few steps can be taken at a time.

The Social Democrats' campaign plans were also benefited by Thorbjorn Falldin's ulcer. The illness occurred at a sensitive time for the Center Party. His invalid status created great uncertainty and confusion. It remains to be seen whether Falldin will be strong enough to break into his famous final spurt.

Even if the political conservative wind is dying down it is likely that the Conservative Party will become bigger than the Liberal and Center parties combined in this fall's election. The middle parties need more time to restore their credibility.

The main alternative in this case would be a nonsocialist three-party government with Ulf Adelsohn as prime minister. A two-party government is just not feasible. The Liberal Party will not form a government with the Conservatives on its own and neither will the Center Party.

A Conservative minority government is the other alternative.

Forming a three-party government would require great Conservative willingness to compromise and flexibility with the orientation of economic policy as an obvious major theme.

The party leaders should be able to agree quickly on eliminating the wage-earner funds and the new property tax as well as on easing taxes on stocks and introducing some form of marginal tax reduction by 1986 in combination with index protection of tax rates. The nonsocialist parties are also all prepared to cut 3 or 4 billion kronor from county and municipal grants.

There are considerably more obstacles. There are the troublesome disagreements over agricultural policy, whether there should be higher or lower food subsidies, the abolition of nuclear power, a waiting period for health insurance, the Dagmar agreement on health care, child care and the orientation of labor and wage policies.

In practice the middle parties have a veto power over the policy a Conservative-led nonsocialist government might want to pursue. The only way to create a Riksdag majority is to gain middle-party support for proposed measures.

Therefore Ulf Adelsohn cannot force the middle parties to go along with a change in the system that they do not want or to compromise on issues on which a Riksdag majority already exists in combination with the Social Democrats.

After they have felt Ulf Adelsohn's pulse the decision the Center Party and the Liberal Party must make is whether they prefer to influence a Conservative-led government from within by participating in a three-party coalition or from without by allowing the formation of a Conservative minority government.

In order to permit the formation of a Conservative minority they would have to take the risk of a new election being called, otherwise the negotiating position in Riksdag would be too weak.

Discontent is spreading in broad rings through nonsocialist and especially Conservative circles. The race is regarded as more or less run after the



successful start the Social Democrats got off to in the campaign and the general nonsocialist lack of resolve.

They seem to be giving up a little prematurely. The five single-chamber Riksdag elections have usually been decided by very narrow majorities. In 1973 the difference was a tenth in favor of the socialists and in 1979 it was two-tenths in favor of the nonsocialists.

The socialist edge of 6.2 percent in the 1982 election--51.2 percent compared to 45.0--was unique in the history of the single-chamber Riksdag. It is very unlikely to be repeated in 1985. Among other things the technical election cooperation between KDS [Christian Democratic Party] and the Center Party will reduce the gap between the blocs.

According to the spring opinion polls over a million voters, especially younger men and women, are undecided as to which party they will vote for.

It is characteristic of this group of voters that to an increasing extent they decide which party to vote for during the last 2 weeks of the campaign and that they choose a party on the basis of proposals they believe will benefit them personally.

In the past Social Democratic sympathizers have shown great party loyalty. A new element in this year's election is that party loyalty is as low among Social Democrats as it is among Liberal and Center Party supporters.

This change suggests that shifts across bloc lines could increase again in this election. The Social Democrats risk more losses than gains among undecided voters, especially families with children and unemployed young people. Broken illusions are a factor here.

This indicates that in spite of the nonsocialist uncertainty this year's election campaign will end in a tough spurt and that the smallest mistake on anyone's part could quickly reverse the election outcome.

These are the things the nonsocialist parties agree on: abolishing wage-earner funds, eliminating new property taxes, marginal tax reductions by 1986, index protection of tax rates, cutting 3-4 billion kronor from municipal and county payments, cutting state spending.

On these things they disagree: agricultural policy, food subsidies, phasing out nuclear power, a waiting period for health insurance, the Dagmar agreement, labor policy and environmental policy.

6578

CSO: 3650/317

POLITICAL

SWEDEN

PAPER CRITICIZES SDP, BILDT FOR STRIFE OVER SECURITY POLICY

Stockholm DAGENS NYHETER in Swedish 16 Jul 85 p 2

[Editorial: "Captives of Block Politics"]

[Text] In an article in the Debate section of DAGENS NYHETER last Saturday, Gunnar Heckscher recalled an episode from security policy negotiations in the sixties when Heckscher represented the Conservative Party. These negotiations were difficult and protracted, but "we finally reached a compromise about 2 o'clock one dark fall morning. Later that same morning the other chamber was in full session when Erlander came up to thank me and to congratulate us on reaching a compromise."

This year, too, a security-policy compromise was reached. This year, too, there were great differences of opinion, but they were bridged nevertheless. Last May, the Defense Committee submitted a unified security policy proposal.

However, a scene similar to that described by Heckscher seems rather inconceivable today: Olof Palme approaching Carl Bildt in Parliament to express his personal appreciation of the fact that members of the Defense Committee were able to reach a compromise!

What we have seen is rather the direct opposite. Already during the press conference 16 May, when the Defense Committee submitted its proposal, Moderate Carl Bildt and Social Democrat Sture Ericsson got involved in a dispute, a dispute that has been ongoing ever since by means of various comments and articles (the latest by Ericsson published in DAGENS NYHETER yesterday) in which both maintain that the other was forced to give in on almost all points deliberated by the Defense Committee.

Gunnar Heckscher's recollection shows how highly unity across party and block lines was valued in reaching a compromise on an important national issue. Today's corresponding example shows that unity is still deemed important with respect to security policy. Obviously, there were many meetings and several compromises behind the committee's unified proposal.

Today, however, compared to 1960, unity is not only viewed as strength, but weakness as well: strength from a national standpoint, but--and for

politicians this seems to be equally important--weakness from a party standpoint. Hence, it is important to describe any such compromise as a 100-percent victory for one's own party and a shameful capitulation for the opposition party. We can cite several examples of this, the most sensational being Kjell-Olof Feldt's comment in wake of the 1981 tax compromise between the middle parties and the Social Democrats. This was a real compromise in which all the parties had to make some adjustments in their position. But the agreement had hardly been signed before Feldt, in almost scornful terms, publicly explained that the Social Democrats had gotten all of their demands while the middle parties had pitifully acquiesced.

Feldt's comment has hurt the climate of cooperation in the political center. The dispute between Bildt and Ericsson has had a similar effect.

Of course, it is nothing new that political parties disagree--nor that their disagreements influence tactical party deliberations. Social Democrats believe they stand to gain by depicting the Moderates as not trustworthy with respect to security policy. The Moderates hope to gain by depicting the Social Democrats as yielding in the area of foreign policy. Neither of them will refrain from using this method of assailing the opposition. However, more than ever, this method of confrontation has become a sad, mechanical routine--and politicians its captives. More and more, charges and suspicions have become a way of gaining mass media attention, a destructive atmosphere when it comes to cooperation. The lesson all parties can learn from this is to avoid compromises with the opposition in the interest of self-preservation. Otherwise, there is a great risk that the opposition will later depict you as a loser, captulator.

The blank dismissal of possible cooperation across block lines--or even a coalition government--is not least due to this destructive political atmosphere, in which small differences are always made much greater than they really are, and in which important common values are belittled or denied.

In the long run, no party stands to gain from this. Instead, politicians as a whole stand to lose--citizen respect and esteem for failing to act constructively.

8952

CSO: 3650/288

MILITARY

FEDERAL REPUBLIC OF GERMANY

## ENHANCEMENT OF ARMY'S COMBAT EQUIPMENT CAPABILITY DETAILED

### Army Chief States Goals

Frankfurt/Main SOLDAT UND TECHNIK in German Jun 85 p 327

[Comment by Lt Gen Hans-Henning von Sandrart, Army Chief of Staff]

[Text] Capable weapon systems and equipment in the hand of our soldiers markedly determine the combat power of the army. Thus they make a decisive contribution to the deterrent ability of the NATO forces against an increasing threat. The possibilities for introducing modern weapons and equipment are limited by the financial framework of the federal budget. A cost-effective possibility of adapting proven weapons to the threat is their enhancement. Here training principles, usage, maintenance and logistics are largely unchanged. Mobilized reservists can also make full use of the known weapons after a short refresher period. However, combat power enhancement is no panacea for saving budget resources. It mandates certain prerequisites, such as an adequate potential for performance improvement and for extending the lifespan. Only then is an enhancement of combat power a sensible alternative to a new development of weapons and equipment.

### Justification of Upgrading Program

Frankfurt/Main SOLDAT UND TECHNIK in German Jun 85 pp 328-329

[Article by Col Reinhard Reichheim: "Principles of Army Armament as Illustrated by Combat Power Enhancement"]

[Text] Armament creates the prerequisite for equipping the army with defensive material as justified by the threat. Thus armament makes it possible for the army to meet its defensive mission within the NATO framework. Armament is consequently an action to meet the threat with strict limitations and conditions. Threat as well as the limitations and outside conditions are constantly changing. The following is a brief discussion of the limitations and the conditions.

New weapon systems must fulfill high military and technical requirements. This includes the need to establish an optimal mission junction between weapon systems already introduced and those newly arriving. Development is to take place within a tightly limited financial volume and short time periods. Development and acquisition is directed by the system management that has to operate within the conditions imposed by administrative, legal, and parliamentary entities.

Moreover, armament is subjected to limiting conditions that arise from general and alliance concepts. For example, our free market economy mandates the use of advertising and competition. The need for standardization and armament cooperation in the alliance is largely due to the joining of the FRG to the NATO alliance.

Finally, armament is strictly limited by the industrial capacity for development and manufacture.

Within this given but changing environment continuous development is necessary to introduce a weapon system meeting the threat. System management must through constant action force a multitude of events and influences into a course that can be planned financially and time-wise so that military requirements are met with an acceptable risk by high performance technology.

### The Threat

The threat by a potential opponent can be assessed from three factors:

- His existing military material;
- His mid- and long-term supply of military material; and
- His mission principles and procedures.

An analysis of the military material of the Warsaw Pact land forces shows on the one hand the well-known quantitative superiority on the side of the Warsaw Pact, on the other a marked differentiation between the introduced and developing weapon systems such as battle tanks, armored personnel carriers, and artillery. (Fig. 1)

Thus the Warsaw Pact armies have in addition to the newest tanks T-72 M 1981 and T-80 still massive amounts of older and old tanks such as T-64, T-72, T-62 and T-54/55. The same is true with APC's and artillery. The reason for this multiplicity can on the one hand be the financial squeeze in arming the Warsaw Pact, or on the other it may be that these types are still assessed by the Warsaw Pact as meeting the threat.

### Meeting the Threat

Army armament must answer the question of how it intends to technically meet a quantitatively superior and qualitatively differentiated threat. The basic answer is: The threat from the Warsaw Pact forces can be met by

- Armament that takes into account the differentiated threat. This can take place by an optimizing of the weapon mix of various systems and/or by a staggered generation change of similar systems.

In individual cases an exact analysis of the threat and friendly equipment is required, with mission principles and procedures playing an important role.

Wherever a gap appears in the equipment it must be closed by armament (Fig. 2). Depending on the extent of the gap and available financial resources the following measures are possible:



- Life-extending measures,
- Combat power enhancement, and
- New developments.

Life-extending measures are adequate when the equipment still meets the threat but has reached an end of its economical useage. An example is the M109G armored howitzer which is being retrofitted after 20 years of use to maintain its supply and extensive component similarity with the U.S. version (M109A3) into a M109A3G howitzer. At the same time the obsolescent tube will be replaced by a NATO standard tube to assure the use of similar artillery ammunition.

Enhancement of combat power is practical where the equipment no longer meets the threat, has not yet reached the end of its useful life, and can be adjusted in a cost effective manner by raising the performance of components (construction groups) or of the periphery (munitions, command systems) to the threat. An example is the M48 battle tank which was enhanced by changing from a 90-mm cannon to the 105-mm cannon of a Leopard 1, as well as by improvements to the field of vision and protection of the crew chief. The penetrating power of the M48 is to be considered equal to that of the Leopard 1. There are further advantages, such as logistical ones in the weapon and ammunition, as well as the familiarity of reservists with this weapon system. As a rule, however, combat power enhancements will not approach the total system performance of a new development.

New development is necessary when the friendly equipment no longer meets the threat and enhancements are not adequate to adapt them to the threat. A difference has to be made between further development of existing equipment (successor, such as a rifle) and new development where there is no predecessor (such as combat drones).

The choice between the three possible solutions must be made in the conceptual stage at the very latest, sometimes already in the development of the tactical requirement. There is thus a broad spectrum for decision on how to narrow or close an equipment gap by appropriate armament decisions.

#### Combat Power Enhancement

The performance of weapon system is intimately but not exclusively linked to the standard of the technology. For example, within the components of drive train, protection or ammunition different technical areas are used and joined into a total system (Fig. 3). The standard of technology and the speed on innovation can differ widely between the sectors. The components concerned thus have a differing developmental potential.

A cost effective adaptation of a weapon system to the threat by improving the performance of the components poses the following conditions:

- Changes in such components as fire direction, sensors, or protection without major changes to other components,

--Improvement of peripheral instruments such as surveillance, command, or training simulators that are clearly connected to the weapon system,

--New development of ammunition for the weapon system without modifications to the weapon and with manageable changes to firing and fire direction.

The following articles describe examples of combat power enhancement. For that reason only the basic advantages and disadvantages of enhancement as compared to new development are to be observed.

#### Disadvantages:

The use of minor performance reserves makes the adaptation to the threat limited in time.

Since the equipment is approaching the end of its useful life a marked rise in operating costs must be taken into account.

Use of technologies at various stages of development can lead to interaction problems within the total system.

#### Advantages:

Flexible and most speedy adaptation to increased threat with reasonable costs.

Periphery, weapons and ammunition remain largely intact.

Training, command, used and logistics are changed only a little.

Reservists can continue to be used without retraining.

Extensive use of the material's lifespan.

In conclusion it can be stated that combat power enhancement is practical wherever the cost effectiveness of the total system over its entire lifespan is greater than in the case of new development. Enhancement can also be forced by special conditions and limitations (such as cost limitation, etc.).

#### Requirements of Future Developments

Experience to date gives rise to the following requirements for future developments:

--Weapon systems must be structured in a way that certain tasks/functions are carried out by certain components (modular structure). If several components are involved clear interface to each other and the system as a whole must be defined.

--Weapon systems must have a potential for development so that their performance can be improved over their lifespan as needed. It may be practical to mandate the potential for long-term combat power enhancement already in the developmental concepts.

--Weapon systems must be designed in close coordination between the military needs and technical feasibility in such a way that maximum technical performance must only be applied where it is inevitable or can be justified by time and cost risks.

--In order to prevail against an increased threat over the total lifespan (up to 40 years in the case of tanks, APC and artillery) a staggered generation change must be provided for under certain conditions (adequate production run for economical manufacture, differentiation of the threat, etc.). An overlap in time between an enhanced system and new development is determined basically by the rate of innovation of the technology used.

In the following articles some successful combat power enhancements are described. There will be future reports about enhancements currently under way, such as the Gepard 2 antiaircraft vehicle and the Roland 2 air defense rocket launcher.

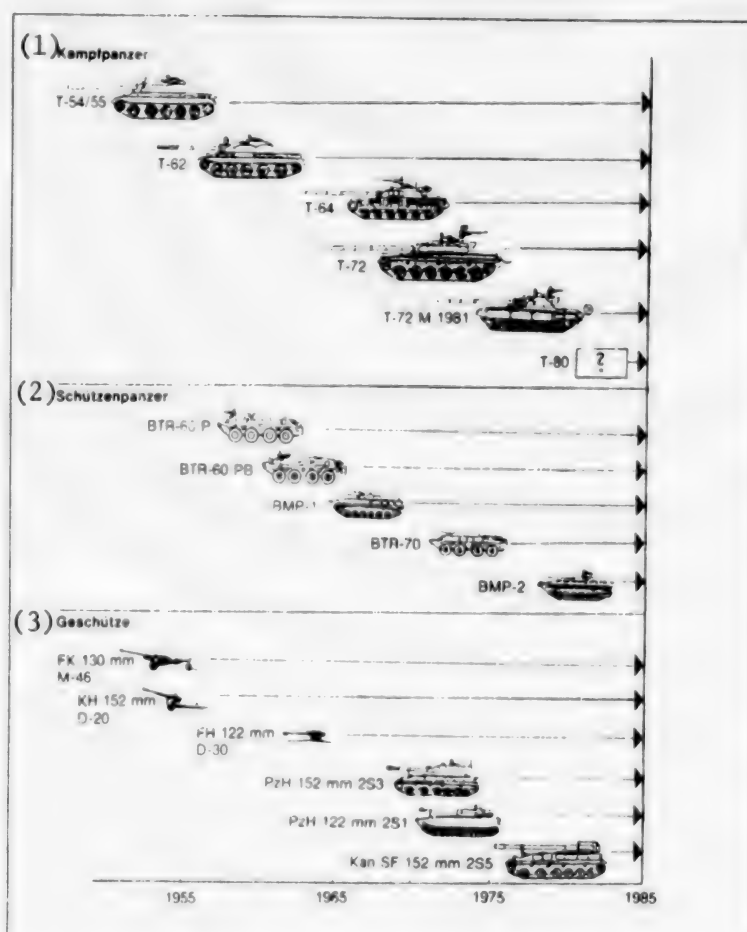


Fig. 1 Qualitative Development of the Threat

Key:

1. Battle tanks
2. Armored personnel carriers
3. Artillery pieces

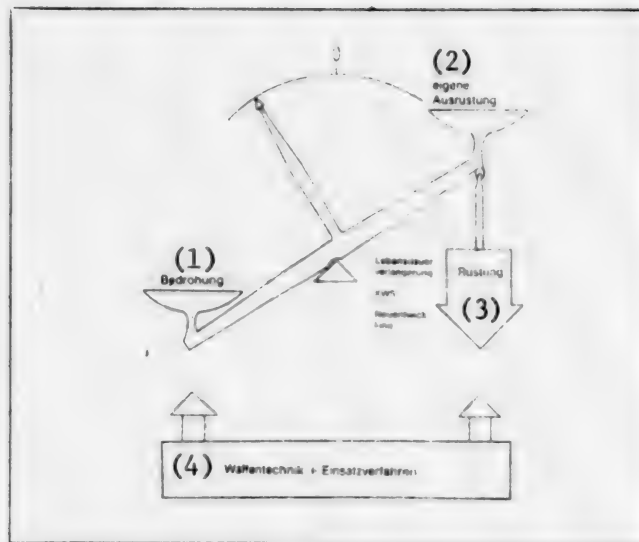


Fig. 2 Combat Power Comparison

Key:

1. Threat
2. Friendly equipment
3. Armament -- extension of lifespan  
-- enhancement  
new development
4. Weapon technology + combat procedures

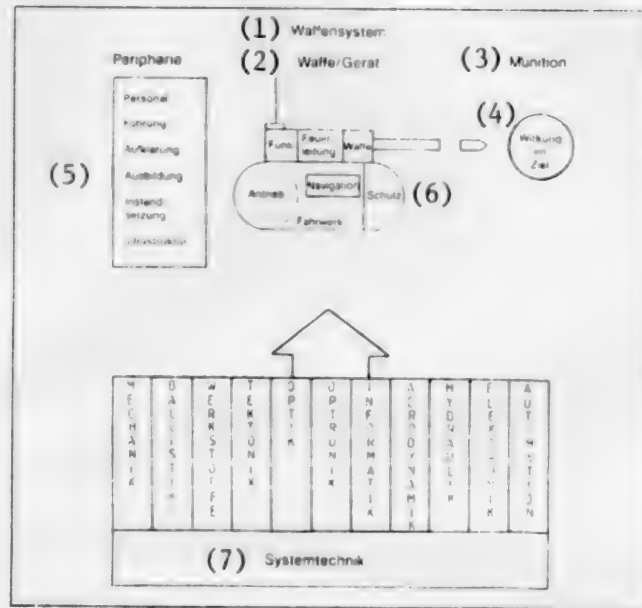


Fig. 3 Dependency of Weapon Systems on Technology

Key:

1. Weapon system
2. Weapon/equipment
3. Ammunition
4. Effect on target
5. Periphery: Personnel  
Command  
Intelligence  
Training  
Maintenance  
Infrastructure
6. Weapon: Radio  
Fire control  
Armament  
Power train  
Navigation  
Chassis  
Protection
7. System technology: Mechanics  
Ballistics  
Materials  
Tectonics  
Optics  
Optronics  
Information  
Aerodynamics  
Hydraulics  
Electronics  
Automation



## Leopard 1 Enhancement Continues

Frankfurt/Main SOLDAT UND TECHNIK in German Jun 85 pp 330-336

[Article by 1st Lt Gerd-Rainer Geist: "Enhancement of the Leopard 1 Battle Tank"]

[Text] The Leopard 1 battle tank, one of the main weapon systems of the German Army, faces its fourth major enhancement. The first Leopard 1 was delivered to the troops in September 1965. Thus the weapon system is in its 20th year of usage and has since its introduction experienced several enhancements to meet the threat and achieve the latest technical standard.

The first enhancement began in 1970. At that time the Leopard 1 was retrofitted with a weapon stabilization device, lateral chain skirts, insulation covers for the cannon, a deep fording equipment and some other improvements (Leopard 1A1). These measures raised its combat power markedly, this included the fact that stop time for firing was shortened or the fire could be opened while in motion; the latter, however, only with a relatively small probability of scoring from today's standpoint.

The second enhancement focused on increased ballistic protection. During a new production of the Leopard 1 in 1972-1983 the cast turrets were strengthened in the first production run (Leopard 1 A2), the second production run was equipped with a welded turret with mailed armor (Leopard 1 A3). The Leopard 1 A1 already in use were retrofitted from 1975-1977 with additional turret armor (Leopard 1 A1A1) and thus acquired the same ballistic protection as the Leopard 1 A2/A3. Additional improvements to turret and chassis brought the standard of the A1A1 to the same level as that of the A2/A3.

The third enhancement consisted of the introduction of a new integrated fire direction system in the sixth run of new production from 1974-1976 (Leopard 1 A4). The welded turret of this run was equipped with a calculator supported distance measuring instrument (EMES 12A1), a fire direction calculator, a stabilized crew chief periscope (PERI-R 12), improved controls, and an integrated checking system. This retrofitting logically continued the first enhancement, the installation of a weapon stabilization system. This fire direction system increased the first hit probability of the Leopard 1 A4 from motion and from halt, it shortened reaction times and improved operability.

However, only one panzer division is equipped with the Leopard 1 A4. In this way the armored force obtained the chance to gather broadly based experiences with the new fire direction system that are later to be used in a further development of the Leopard 1 or of a new battle tank.

### Necessity and Extent of the 4th Enhancement

The need for a renewed enhancement of the Leopard 1 rose from the following facts:

--Needed adaptation of the weapon system to the perceived threat,

--Decision to extend the use phase beyond the year 2000,

--Use of technological progress, such as the galloping developments in electronics and optronics,

--Experiences gathered from "troop trials within a division" of the Leopard 1 A4 as well as other experiences and situation reports from the armored force.

The following aspects of the expected threat influence the further development of the Leopard 1 weapon system:

--Continuing quantitative superiority of the opponent,

--Increasing technical quality; in some areas technological equality must be assumed,

--Focus on further development of the armored forces,

--Attacks by massed armored units in echelon with support from artillery, combat helicopters, etc., to achieve rapid and deep penetrations and breakthroughs,

--Uninterrupted combat by day and night.

In order to meet this future threat over the planned use phase the combat power of the Leopard 1 must be improved in the following way:

--Increased probability of first hit,

--Shortened reaction time,

--Combat capability by day, night, and poor visibility,

--Improved ammunition effect on target,

--Improved ballistic as well as passive protection,

--Increased survivability of the crew.

These requirements can be met by the following measures:

--Installment of a new fire direction system with partial maintaining of existing optics,

--Improvements in the area of chassis and turret,

--Introduction of new camouflage paint,

--Refitting the radio system with the new SEM 80/90 radio generation,

--Development and introduction of improved performance ammunition,

- Introduction of new rapid smoke generating projectiles,
- Development and installation of an optronically covered smoke and deception system,
- Research and possible installment of a new additional turret armor,
- Possibility of installing the 120-mm smooth-bore cannon of the Leopard 2,
- Research into installment and possible installment of a fire suppression system.

The question why the financial resources for an expensive enhancement of the Leopard 1 were not used for additional acquisition of Leopard 2 tanks can be answered as follows: In order to cover the battle area in our concept of forward defense a minimum number of threat-meeting weapon systems must be available. A minor additional number of Leopard 2 cannot come close to compensating for the deterioration of combat power that would arise if the enhancement of Leopard 1 would be abandoned. Such a measure would not take into account the threat aspect contained in the quantitative superiority of the enemy.

#### Enhancement Measures for the Leopard 1 Battle Tank

##### Introduction of a New Fire Direction System

Installation of a new fire direction system with the most modern components of current technology is at the center of the fourth enhancement. The performance requirements that the new fire direction system must meet have been fixed in the tactical requirements dating from 1981. On the basis of that document three German firms produced a fire direction system each. In September and December 1983 the selection decision was made in favor of the EMES 18 fire direction system of the firm KAE, Bremen. The firm Wegmann & Co. in Kassel was selected as the chief contractor for installing the EMES 18. The first enhanced Leopard 1 are to be delivered to the troops in late 1986.

The following requirements were placed on the new fire direction system, and EMES 18 fulfills them: High probability of first hit, shortened reaction times until fire commencement, conduct of the fire fight by the gunner or the crew chief, firing of six kinds of ammunition with the sighting periscope, passive observation, identification and aiming by day, night, and limited visibility, distance measuring, aiming and shooting while in motion, simple and rapid operation of the fire direction system, simple and quick adjustability, high adjustment accuracy and adjustment maintenance, high degree of reliability of the fire direction system and thus a greater degree of availability of the tanks, internal controls of the fire direction system functions by the crew.

The EMES 18 fire direction system was developed from the Leopard 2's EMES 15 system. It consists of EMES 15 components that were partly modified for the Leopard 1. In that way a high degree of logistical similarity to the Leopard 2

was established. The new fire direction system of the Leopard 1 is described below. Figure 2 depicts the design of the EMES 18 fire direction center and the installation of that component in the turret. It consists of the following components:

#### Main Aiming Sight With Thermal Image Device

The main aiming sight (HFZ) is the chief aiming component of the Leopard 1. It is used by the gunner or the crew chief for observation, target identification, distance measurement and aiming, be it day, night or limited visibility (fog, rain, etc.). It consists of components of the Leopard 2's EMES 15. The crew chief can use all the parts of the HZF through the EMES access (chief). The HZF is located in the turret in front of the gunner and consists of the following compact parts:

- Viewing group (mirror head)
- Junction group with laser sender and laser receiver (central part)
- Thermal image device
- Access group
- Mounting with headrest

The individual components are connected to each other by way of the mounting and are attached to the turret roof. The compact arrangement, depicted in Figure 3, guarantees a high degree of adjustment reliability.

#### Fire direction calculator with sensors and operating equipment

The fire direction calculator has two main tasks: Determining elevation and declination values as well as stabilizing the aiming lines in the sight. It is located on the turret ramp under the crew chief's seat and represents the Leopard 2 device with small modifications. The calculator determines the elevation and declination values by considering the following input:

- Differing kinds of ammunition for the cannon,
- Selection of the machine gun to fire,
- Laser distance measurement,
- Manually fed distance,
- TRP (commander's periscope) distance,
- External temperature,

- Air pressure,
- Powder temperature,
- Crosswind velocity,
- System error correction,
- Tube wear with v-angle correction,
- Vehicle incline,
- Point and field adjustment as well as
- Idling.

The movement of the tank and the movement of the target are taken into account in the following way: Parallax compensation is automatic. The leading angle sideways and up is calculated on the basis of target tracking speed by the gunner relative to the target. The aiming hairlines of the HZF with the thermal image device are stabilized. Aiming is independent of an incline. The dynamic lead is filtered independently of the distance, since the system must react quickly at short distances because of rapid angle speeds. At great target distances inertial processing of the gunner's aiming signals is necessary.

The fire direction calculator is equipped with a digital ballistic core which is designed to allow for future changes in ammunition ballistics and the attachment of future training devices to the fire direction system without extensive and cost-intensive modifications to the calculator hardware.

Sensors deliver input data to the fire direction calculator.

The calculator operational device serves for inputting received data and corrections into the fire direction calculator. The operating device is located above the gunner and can also be operated by the crew chief. This component has also been taken over from the Leopard 2.

Peripheral aiming periscope for crew chief (TRP)

The TRP (turret peripheral pankrat) is an observation and aiming device for the crew chief. It has been taken over from the old fire direction system and has been modified to the extent that the viewing head was extended so that it reaches up above the HZF mirror head.

Turret aiming periscope for gunner (TZF)

The TZF is a second observation and aiming device for the gunner. It too was taken over from the old fire direction system.



### Gunner operating device

The new gunner operating device is located in front of the gunner that serves to switch into various operating modes, serves the HZF and the thermal image device, electrical adjustment of the HZF and the thermal image device, operation of the central control electronics and for checking the operating condition of the fire direction system. The component has been essentially taken over from the Leopard 2. Figure 4 depicts the combat station of the gunner with the components of the new fire direction system.

### Loader operating device

The loader operating device serves the loader in ammunition selection, making the main weapon ready to fire, turning on the turret hydraulics, and for operating the combat station ventilation. Ammunition selection is reported to the fire direction calculator and is processed there for selection of the elevation angle. The component is largely identical to that of the Leopard 2.

### Thermal image device (WBG) operating device for the crew chief

The crew chief can use this device to operate the WBG. It is an original part of Leopard 2. The control signals of the device are transmitted to the WBG electronics. The battle station of the chief is shown in Figure 5.

### WBG Electronics

This electronic unit is the central current supply for all components of the thermal image group. It is located to the rear of the turret and is identical to that of the Leopard 2.

### Monobloc Electronics

The monobloc electronics replaces the previous electrical components of the weapon stabilization device. It also contains a monitor and a coincidence switch which permits firing only once the main weapon is located laterally and in elevation at the position determined by the fire direction calculator. The component is located in the turret rear.

### Adjustment, test and logic group (APL)

This component is the connection between Leopard 1 and Leopard 2 components and has various electronic tasks. For example, all signals of the fire direction system are joined in this component.

### Internal control system of the fire direction system

This control system checks on the operability of the fire direction system. Defective components or subcomponents can be located with this system. The control system fully meets the required control effort of the MES 1 level and greatly that of MES 2. It is operated at the gunner operating device and can be switched to "operating control" or "technical inspection."

## Angle transfer components EMES/TRP

This component consists of the locating component with the EMES and TRP positioning devices and of a parallelogram framework. The locating component is attached by the parallelogram frame to the weapon cradle. It serves to report the elevation angle of the main gun to the fire direction calculator, the HZF and the TRP.

## Field adjustment device (FJA)

The field adjustment device consists of the field adjustment collimator at the mouth of the gun as well as of a part integrated with the other components of the fire direction system. It permits the gunner to quickly check the adjustment of the HZF to the main gun.

## Operation of the EMES 18 fire direction system

The EMES 18 fire direction system can be switched into four stages of operation from the gunner's control panel. The full power of the fire direction system is achieved at the level of operation "Stabilization One." A constantly high first hit probability and a short reaction time are achieved by the following decisive characteristics:

- Equal field of HZF/WBG vision for both gunner and crew chief.

- Undisturbed field of vision even while driving over difficult terrain. The space stabilized sight hairlines continuously point in the same direction independent of the swerving and bumping of the tank.

- Automatic lead calculation in the case of moving targets and/or of own tank. Point adjustment is not required since the weapon is automatically directed with consideration of the movement of the target and of one's own tank.

- Automatic equalization of the parallex data for daylight and thermal image aiming.

- High aiming speed of the HZF.

- Simple operation of the laser distance meter.

## Adjustment of the EMES 18 fire direction system

High requirements are placed on the new fire direction system concerning simple adjustment, high adjustment accuracy, and maintenance of the adjustment. The EMES 18 meets these requirements with construction and system-technical properties. Within the MES 1 maintenance level point adjustment for distant targets is possible at either arbitrary or fixed distances (1,000 m or 1,500 m), and field adjustment can take place with the field adjustment device. The crew does not have to leave the vehicle during field adjustment.

## Evaluation of the new fire direction system

With the changeover to the EMES 18 fire direction center the Leopard 1 becomes combat operational without limitations during day, night, and poor vision. The fire direction system equals the standard of the EMES 15 of the Leopard 2. With this enhancement the Leopard 1 has achieved the technical standard needed to meet the threat today and in the future.

The fire direction system in its conception and construction meets the future needs and changes in tactical and logistical areas. The future usefulness of the system is proven by further characteristics: Possibility of using other laser versions, such as the CO<sub>2</sub> laser, attachability for crosswind sensors, powder temperature sensor, automatically operating sensor for the kind of ammunition loads, dueling simulators, a television surveillance camera, a device for delimiting the field of fire.

Another decisive advantage of the EMES 18 is the marked logistical identity with the Leopard 2 fire direction system. Approximately 80 percent of the Leopard 2 parts were used in the EMES 18 fire direction system. This results in reduced logistical efforts, simplification of training, and possibility of taking over a large part of the materials from the Leopard 2 battle tank.

## Improvements in chassis and turret

Before retrofitting with the EMES 18 fire direction system the tanks go through scheduled depot or general maintenance. Within this advance maintenance measures a series of improvements in the shape of technical modifications are carried out; these can be partly classified as enhancements in combat power, partly as measures to improve durability. Through improvement of durability the availability of the tank is increased and this too results in increased combat power.

Within the chassis the following modifications were carried out:

- Installation of a water jet cleaning device for the angle mirrors of the driver. The device prevents early inoperability of the tank in difficult terrain due to dirty mirrors. Figure 6 depicts the operation of the cleaning device.
- Installation of maintenance-free batteries.
- Improvements to the shock absorbers of the track.
- Strengthened bearing for the track.
- Installation of eyelets to the turret to reduce loading efforts during ocean transport.
- Improvements to the NBC protection device.

Within the turret the following modifications were made:

- Laser protection for all optical instruments and components to protect the crew.
- Installation of an optical junction in the TZF.
- Improvements in the area of ammunition stowage.
- Installation of new armor bearings.
- Improvements to the mounting of the horizontal aiming cylinder.

#### Application of new camouflage paint

Another enhancement measure consists of the application of camouflage paint that increases passive protection. The paint consists of a three-colored pattern with green, brown, and black colors. It was developed jointly by the United States and the Federal Republic of Germany for major pieces of equipment of the two armies. The new camouflage paint considerably decreases detection of the Leopard 1, and thus it increases its survivability and its combat value. Figure 7 depicts a Leopard 1 with the camouflage paint. This camouflage measure is carried out by the troops on hand of a pattern developed in 1985 specifically for the Leopard 1.

#### Changing the FM system to a new radio generation

Within the second radio retrofitting for the army the Leopard 1 tank also received the new VHF radio generation SEM 80/90. The new radios have a modular construction. The vehicular SEM 80 radio becomes an SEM 90 by the attachment of a 40 W amplifier. The new radios are smaller and weigh only one-third as much as the old generation. Among the important innovations are:

- Automatic channel selection with 16 channels contained in a bundle. On this channel circuitry several radio contacts are possible at the same time, since a free channel is always selected automatically. In this way the available channels can, in contrast to the old system, be occupied by far more circuits.
- Transmission of radio signals between the instruments is digital.
- The new radios make wide use of integrated and highly integrated semiconductor circuits.
- The SEM 80/90 are equipped with NEMP protection.
- The new radios have a self-checking device. An operator can check the operability of his radio by pushing a button. Defective parts are digitally depicted on the base plate.

Figure 8 depicts the radio set SEM 80/90 of a Leopard 1. The new radios bring about the following improvements that contribute to enhancement of the combat power of the weapon systems and the armored force:

- Improved quality of radio contacts; in this manner the tank units and forces are more securely directed in combat.

- Detection, jamming, and interception of friendly radio contacts by the enemy is more difficult.

- Protection from NEMP.

- The self-checking feature, modular construction, and the scheduled part exchange contribute to a markedly improved operability of the Leopard 1 signal equipment.

#### Development and introduction of enhanced ammunition

The fire power of the Leopard 1 is decisively improved by the development and introduction of improved performance ammunition. To date the following ammunition was used in the Leopard 1:

- APDS (kinetic energy)

- HEAT (shaped charge)

- HEP (collapsing head)

The munition category APFSDS has been introduced as a successor to the APDS. These kinetic energy rounds serve to destroy enemy armor. The APFSDS (DM 23) that has already been introduced consists of a fin-stabilized kinetic energy round with a heavy metal penetrator. In contrast to the previous APDS this ammunition category has greater diameter load and uses another penetrator material. The two round modifications result in increased penetrating ability of the projectile which also increases the combat power of the Leopard 1 weapon system.

The HEAT and HEP still in use will be replaced by a still to be developed HE round. This reduces the anti-armor ammunition of the 105-mm to two categories of ammunition. The new HE round is designed to engage unarmored, and lightly armored targets and field fortifications.

#### Introduction of rapid smoke generating projectiles (SNWK)

Leopard 1 has a fog generating device that shoots fog producing projectiles that build a wall of smoke in front of the tank. Under the protection of the smoke cloud the tank can escape direct enemy sighting and weapon effects in dangerous situation by moving into a more favorable position while the smoke wall lasts.



Since the threat has changed since the introduction of previous smoke projectiles and shorter reaction times are needed, new fog generating projectiles were developed that are able to establish the artificial smoke wall much faster than before. The first model of the SNWK has already been introduced, competing models are still in the developmental stage. The new rapid smoke generating projectiles increase the passive protection of the Leopard 1 and thus also improve its combat value.

Further possible measures to enhance the combat power of the Leopard 1

#### Development of an optically covered smoke and deception system

The threat to armored troops has considerably changed over the last 20 years and will become greater in the future. Even today armored vehicles are threatened by a wide array of weapon systems, such as enemy tanks, helicopters with cannon and rockets, end-phase guided artillery ammunition, and antiarmor missiles. Moreover, reconnaissance devices are being developed which result in marked improvements to target acquisition, identification, and pursuit.

In order to meet the threat posed by the new weapon systems and reconnaissance devices there are developments in the area of passive protection through camouflage and deception. The Federal Office for Defense Technology and Procurement and the industry are jointly developing smoke that is to contain the following components:

- Smoke covering the visible spectrum,
- Smoke covering the infrared spectrum,
- Smoke covering radar spectrum,
- Smoke covering the laser spectrum.

These individual components could, for example, be installed in a smoke generating projectile and shot off by a catapult. But other devices are also possible, such as smoke generators. In order to eliminate the effect of modern detection devices and target instruments and to protect itself from new weapon systems a tank with the new system must be able to establish in its front an adequately sized smoke screen with optronically covering smoke in an extremely brief period, it must be able to establish an optronically covering fog shroud over the tank, and emit decoys that will lure the target-seeking ammunition.

Such a smoke and decoy system can lead to a cost-effective enhancement of all tanks. In the case of conflict such a system can pay for itself already with the first successful use.

#### Research into additional turret armor

The Leopard 1 tank also needs enhancement in the area of ballistic protection, since the threat demands it. New ammunition development on the part of the opponent, especially in the area of armor piercing ammunition, may make an increase in the ballistic protection necessary. There are thoughts about a new turret cover and about protective packets with shock absorbing mountings. The research continues.

#### Installation of the 120-mm smooth bore Leopard 2 cannon

Firepower of the Leopard 1 can, if needed, be brought to the level of the Leopard 2. This possibility is of particular interest to the countries using the Leopard but which do not want to field the Leopard 2 while desiring to further extend the useful phase of the Leopard 1. Some countries have already shown interest in the enhancement with a 120-mm cannon. The Rheinmetall firm has commenced development of a refitting. The first prototype, a Leopard 1 borrowed from the German Army, has already been equipped with the Leopard 2 120-mm weapon system and has been subjected to various factory gunnery and driving tests. By early 1985 this prototype will be equipped with the EMES 18 fire direction system. Then the Rheinmetall firm will conduct factory trials with the tank. Starting mid-1985 the prototype can be used by the BWB and the Bundeswehr in technical and troop trials. Figure 9 depicts the prototype with the 120-mm smooth bore cannon.

#### Research for installing a fire suppression system

The crew survivability in a Leopard 1 can be decisively improved by the installation of a fire suppression system. Research by the relevant industries showed that a high percentage of expected hits would lead to ignition of fuel and hydraulic fluids and give rise to explosive fires. These fires would have dismal results for the crew in the form of internal injuries, severe burns, suffocation and poisoning. Research conducted by the industry has shown that reporting and suppressing these explosive fires is possible, and thus the tank crew has a great survival chance in the case of such hits. Such a fire suppression system is already at the production stage for the Leopard 2. At this time research is underway regarding installation in the Leopard 1.

The enhancing measures described in the article enable the Leopard 1 weapon system to meet future threat beyond the year 2000. The following is a summary of the individual measures:

--Installation of the EMES 18 fire direction center, leading to increased first hit probability, considerably reduction of reaction times, full combat readiness by day, night, or reduced visibility. In the area of fire direction the Leopard 1 has been brought to the level of the Leopard 2.

--Improvement of combat power and enhancement of material durability through technical modifications to chassis and turret. This increases the availability of the Leopard 1.

--Development and introduction of enhanced ammunition, thus approaching the effectiveness of Leopard 2.

--Installation of a new radio generation, resulting in increased operability of the radios and secure command of tank units in combat.

--Increases in the passive protection of the weapon system by introduction of camouflage paint and the new fog generating projectile. In this connection mention is to be made of the development of a new smoke and deception system.

--In the case of need and availability of the required financial resources there is the possibility to improve ballistic protection, install the 120-mm Leopard 2 weapon to increase fire power, and install a fire suppression system to increase crew survivability.

--Considerable improvement to logistics and simplification of training of the armored use by utilizing Leopard-2 parts to the extent this is technically feasible.

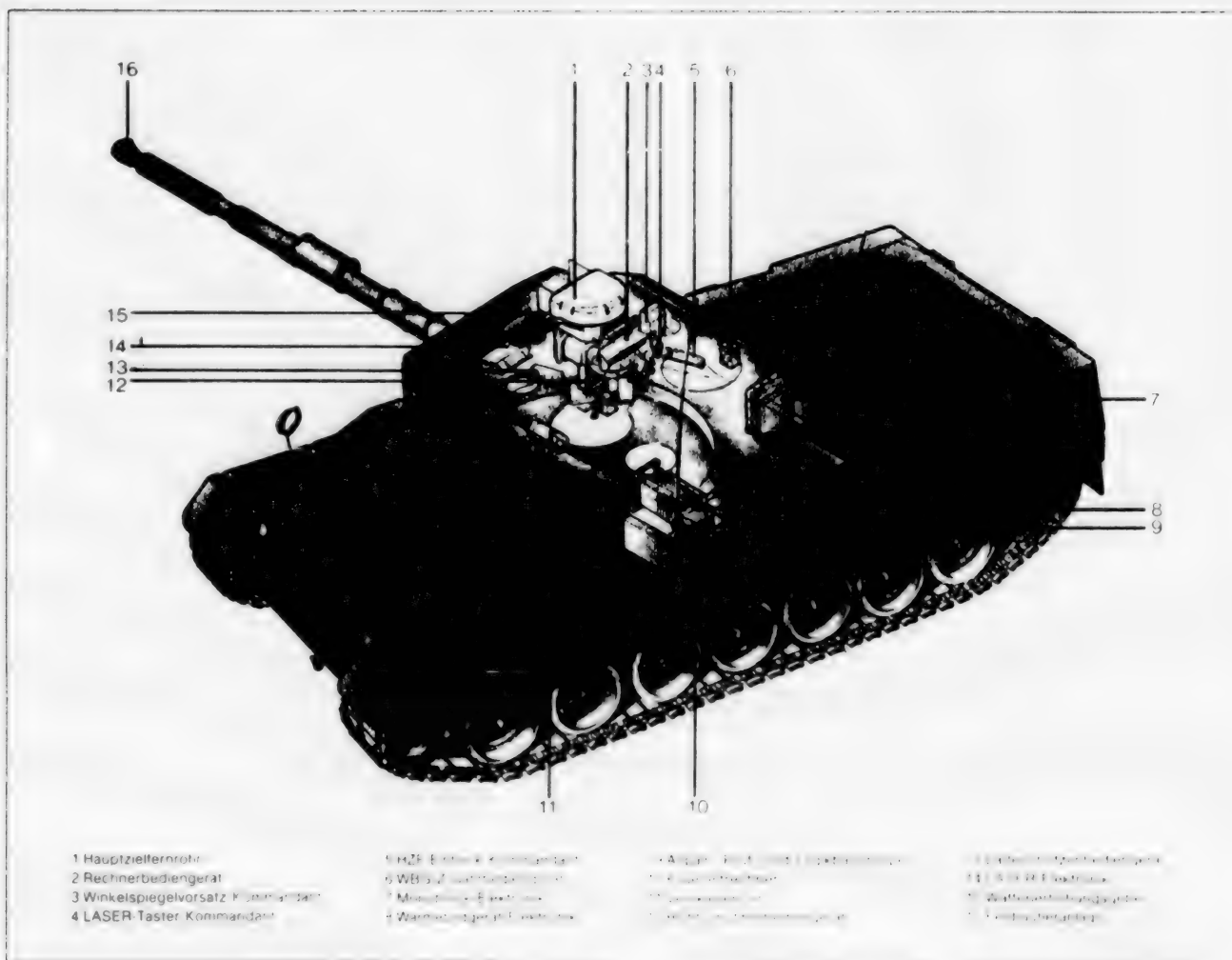


Fig. 2 Location of EMES 18 Fire Direction System and Construction Units in Turret

Key:

1. Main telescopic sight
2. Calculator controls
3. Optical mirror display for crew chief
4. Laser key for crew chief
5. Main sight access for crew chief
6. Auxiliary thermal image device controls
7. Monobloc electronics
8. Thermal image device electronics
9. Adjustment, testing, and logic group
10. Fire direction calculator
11. Vertical sensor
12. Gunner controls
13. Loader controls
14. Laser electronics
15. Weapon elevation indicator
16. Field adjustment device

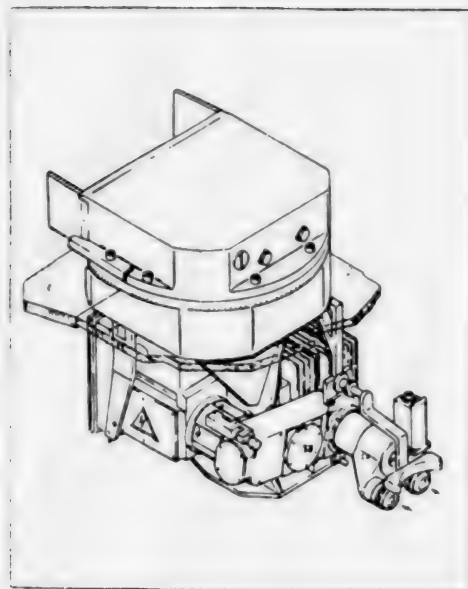


Fig. 3 EMES 18 Main Telescopic Sight

#### Jaguar 1 Tank Destroyer Upgraded

Frankfurt/Main SOLDAT UND TECHNIK in German Jun 85 pp 338-343

[Article by Maj Ernst Kollwe: "Improvement of Jaguar 1 Tank Destroyer"]

[Text] From 1978 to 1982, 22 companies of tank destroyers were equipped with the tank destroyer 1 (Jpz 1). At the delivery of the first production model to the troops it was christened Jaguar 1. The Jaguar 1 was created from enhancement of the rocket-firing tank destroyer 2 (RakJPz2), especially by substituting the HOT anti-tank rocket for the SS 11 weapon system.

Tank destroyers destroy enemy tanks with the long-range rockets of the tank destroyers, usually in combat with combined arms. They use the superior range of their guided weapons to inflict losses on hostile armored forces at an early point in time, before these can make effective use of their cannon, or before friendly tanks can make effective use of their arms. For that reason tank destroyers are used mostly in the area of concentration where their mobility can be used. The important tasks of the tank destroyer units are thus

- early degradation of an armored opponent,
- improvement of the tank defense of the combat units, and
- guarding the flanks and movement of combat forces in all battle situations.

#### Development of the missile tank destroyer

In order to meet these tasks that were already relevant in the 50's combat vehicles with long-range anti-tank guided weapons had to be developed in the late 50's. Most of all, a weapon had to be found against the Soviet JS-3 and T-10



reconnaissance tanks. The first long-range anti-tank guided missile in an armored vehicle of the Bundeswehr was the French SS 11 that was first installed on the RakJPz 1 (APC HS 30 chassis) beginning in 1961. This tank destroyer had two extendable starting ramps, the gunner guided the rocket in the early models with an open mirror device, later with an extendable periscope. However, there was dissatisfaction with the chassis, the SS 11 combat load was too small, and except for angle mirrors the crew chief had no other means to observe the battlefield from a protected position. Thus there were calls for a new tank destroyer that was to integrate the enhanced weapon system of the RakJPz 1. This RakJPz 2 was developed by Thyssen-Henschel beginning with 1961 as part of the family "New Armored Personnel Carrier" that included the gun-equipped tank destroyer and the Marder APC. It was delivered beginning with 1966.

Due to changes in the threat spectrum in the 60's (including the introduction of the T-62) and the rapid equipping of motorized rifle divisions with additional armored forces it became necessary to improve the performance of the tank destroyer. On the basis of threat analysis the following military requirements expected of an improved tank destroyer with a new anti-tank weapon were listed (the performance of the RakJPz 2 with an SS 11 is shown in parentheses):

--Great destruction probability of battle tanks and also of reconnaissance tanks (penetration of about 500 mm of massive tank steel at an angle of 0°).

--Effective combat range of 75-3,000 m/with 4,000 m desirable (about 800-3,000 m).

--Rate of fire of nine rockets in 3 minutes (about one rocket a minute).

--Simple use and training (long training and difficult operation since rocket belonged to first generation).

--Tank destroyer fire from covered position (thus a periscope needed with the crew remaining in the tank destroyers) (protection against NBC and tanks).  
(RakJPz 2: Armor protection afforded. NBC protection only for limited period).

In comparison with these military requirements the performance of the PakJP 2 were evaluated as follows:

**Firepower:** The SS 11 antitank rocket can since 1975 no longer be used to meet the threat. High probability of hits can be achieved with a rocket of the first generation only in the case of especially suited personnel after lengthy specialized training. Antiaircraft machinegun can be used only to a limited extent.

**Maneuverability:** As a member of the "New Armored Personnel Carrier" family the RakJPz 2 has good terrain maneuverability and requires improvement only in some details.

**Protection:** The armor and NBC protection is still adequate but should be improved if possible.

Command: The field of sight of the crew chief is very limited once the hatches are shut. Also, he operates both the antiaircraft and the forward machineguns in addition to the radio. This has a negative effect of the chief's ability to command. Thus there arose the solution: Further use of the RakJPz 2 with enhancement in the firepower component and minor improvements in the other parameters of maneuverability, protection, and command.

To improve the weaponry the following systems were considered:

- SS 11 B1 (harpon)
- TOW
- HOT

The SS 11 B1 and the TOW, both with semiautomatic guidance systems were not pursued since they did not meet the various military requirements (especially in range).

The HOT antitank missile: As early as 1963 joint work was begun with France to develop a system that would meet the bilaterally posed military and technical requirements (which were made specific in 1968). To carry out the development the firms Messerschmitt-Boelkow-Blohm (MBB) and Aerospatiale (France) joined into a Euromissile firm which since that time has been the general contractor. On the basis of experiences made with the SS 11 B1 (Harpon) which used a similar guidance system the developmental risk seemed to be estimable. Similar to the case of the Milan anti-tank rocket bilateral cooperation with France promised cost sharing in development, cost reduction as a result of greater numbers in joint production, and lowering of costs thanks to joint (at least partial) logistics, to include spare parts supply. Since the cost estimates of the three above-mentioned weapon systems were similar considering their performance the HOT was selected to replace the SS 11 in the RakJPz 2 and a contract for development was issued. Bilateral ammunition tests followed in 1972-73, in 1973-74 there were national tests in the prototype of the JPz 1, in 1975 there was the first troop trial, and in 1977 followup testing and a second troop trial. The JPz 1 fulfilled the above-listed military and technical requirements. From 1978 to 1982 a general overhaul and enhancement of the RakJPz 2 into the JPz 1 was carried out by Thyssen-Henschel in Kassel, and delivery was made to the tank destroyer force.

In order to be used in various vehicles the HOT system was delivered in several versions:

- Periscope construction--use in JPz 1.
- Stabilized construction--PAH-1 and Gazelle (France) helicopters.
- Lifting device with stabilized Mephisto periscope--use in VAB (France).

At the initiative of the firm various turret solutions (including HCT--HOT Compact Turret for light vehicles) were developed. By now the HOT system is used on various vehicles in 14 countries (including Germany, France and Spain).

## Enhancement measures from RakJPz 2 to JPz Jaguar 1

The maneuverability of the RakJP 2 met the military requirement, so the drive train was improved only in some areas. In order to reduce maintenance grease lubrication of the drive train was replaced by oil lubrication. Modern seats allow the crew to move faster with the JPz 1 in the terrain.

To increase the armor protection the battle area of the JPz 1 was reinforced in the front and on the sides with additional armor consisting of shock-absorbing, plastic-wrapped armor plates. In addition, track skirts were attached to improve ballistic protection on the sides and to reduce the swirl of dust, dirt, etc.

The position of the crew chief, or of the platoon leader, was modified as far as possible so that he can to the greatest extent fulfill his main task, command of the JPz (Table 2).

The focus of improvement was, however, the increased firepower resulting from the replacement of the SS 11 weapon system (first generation) with the HOT system in periscopic version (second generation).

The following comparison points out the differences between the two systems:

### SS 11 weapon system

The gunner had to switch several times the enlargement of his periscope (from xl and xl0) to observe the target and the missile, and at the same time had to guide the missile to the target through sensitive movement of the guidance stick on the command panel of the weapon system (and subsequent relay of the signal through two guiding wires).

The speed of flight of the rocket could not be too great due to the limited human reaction speed.

This necessitated:

--relatively large fins to maintain the required momentum in flight which made operation in the JPz and in transport difficult and,

--a long period of flight and thus lengthy periods of sight, especially in the case of laterally moving targets. The gunner thus had to have a great power of concentration and had to have had a long period of training in gunnery.

### HOT weapon system

The HOT rocket in JPz 1 consists essentially for a guidance system in a telescopic construction and of the K3S trigger mechanism. The HOT is led to target by the SACLOS method (semi-automatic command to line of sight). The gunner merely has to aim the guidance device, fire the rocket, and maintain the visor

on target during the entire flight with the aid of the aiming unit. Everything else takes place automatically in the guidance system. Two IR emitters (day and night emitters), built in a circle in the tail of the rocket emit IR rays that are received by the IR locating unit in the aiming and locating block of the guidance system. A very accurate angle calculator (goniometer) with its axis parallel to the optical axis of the guidance system (corresponding to the line of sight) constantly measures the deviation (lateral and vertical) of the actual flight path from the ideal one (which is the same as the line of sight). The deviations are processed by the locator electronics in deviation tensions that are magnified and transmitted to the guidance electronics. This converts the deviation data into guidance commands that are transmitted to the rocket by the guiding wire. The rocket obeys the commands by greater or lesser movements of the rudder that extends into the jet of the rocket engine. In this way the rocket remains in a "flight tunnel" with the line of sight its axis. At the start the guidance electronics steer the rocket so that it soon enters the field of vision of the IR locator. For this locating ("capture") of the rocket the "near field" with a wide field of vision (small enlargement) is automatically switched, and is automatically switched to the distant field after three seconds since at that time great accuracy with high enlargement is needed to guide the rocket.

The HOT rocket represents an important improvement over the SS 11, especially with regard to the time of flight and the relief of the gunner. The speed is much higher and is limited only by the unwinding of the guiding wire or by air resistance. Thus the "line of vision" is much smaller. The minimum battle distance is small, operation is easy since the gunner only has to learn to keep the sight on a moving target. Thus the focus of gunnery training can be switched from gunnery practice to target detection and target selection.

The The rocket [as printed] is located in a fiberglass starting tube which permits its treatment almost like conventional ammunition. The rocket is fired out of that tube which makes its handling considerably simpler and which made the development of the automatic K3S possible in the first place. The latter fulfills the following tasks:

- Automatic rocket extraction (with the start tube),
- Synchronization with guidance device,
- Jettison of start tube, and
- Automatic reloading.

Its main characteristics are NBC protection by sealing of the battle station and rapid repair outside the vehicle. Like the guidance system it can also be removed as a unit. The technical data of the rocket in comparison to the SS 11A are shown in Table 3.

Enhancement provided the following important advantages for the JPz Jaguar 1:

- Higher rocket velocity, thus a shorter flight time and shorter "line of sight" needed, conversely, considerably shorter time of exposure and vulnerability of the rocket.

--Better minimum and maximum combat range.

--Simplified training and greater reliability; probability of hit significantly greater.

The following calculation shows the advantage even more clearly: Against a tank unit attacking at 18 km/hour (5 m/sec) the two systems have an effect illustrated in Table 4. (Position change and differences in reliability, penetration, and "line of sight" were not considered).

#### Training devices

For the training of Jaguar crews particular use is made of a training packet developed by Eltro in Heidelberg, in addition to target control devices and battle station trainers. The packet consists of an aiming evaluation and aiming practice device for the JPz1 (RAG/JPz1) which permits complete, verifiable gunnery training. The device can be used everywhere in the field which makes training interesting and realistic. The RAG uses a guidance system built into a projecting stage of a standard II cabin and connected to video and audio devices. The cabin is loaded on a 5 ton 4x4 truck. There are plans for developing a duelling simulator. Various training devices are available for training maintenance personnel.

#### Maintenance devices

In order to use JPz1 weaponry with its semiautomatic guidance system in an automatic fashion requires a difficult technical solution in which electrical, electronic, hydraulic and mechanical components interact closely (hybrid construction) and where guidance and adjustment technology plays a major part. For that reason repairs are not easy in case of damage, however, the guidance and trigger mechanisms can be easily removed.

The crew regularly conducts self-checks and in an emergency is able to operate the system manually. As a rule the maintenance team of the tank destroyer company repairs damages up to the second material maintenance (MES) level with its shop equipment (WSA). If that is not possible the WSA for the guidance system or the electrical and hydraulic parts of the trigger mechanism are applied at MES 3 level. The WSA are still in development and are to be introduced beginning in 1986. Some of the electronic parts are also to be repaired by the REMUS testing stations. The training and maintenance devices for the chassis of the Jaguar 1 remain unchanged.

#### Planned enhancement of the JPz Jaguar 1

At an early stage there was established the need for the JPz to be able to fight at night without illumination support, but only the introduction of thermal image devices (WBG) has allowed tank destroyers to at least partly use their great effective range at night or in limited visibility. At this time the night target and surveillance device is being developed for the JPz 1 which is based on the common module technology of the WBG in Leopard 1 and 2 battle



tanks, but it will be optimized for greater ranges and guidance of the HOT rocket. This is done by using larger optics. The armor protected NZBG [night-time aiming image device] will replace the aiming head of the guidance system so that the extent of modification will be small. The thermal image will be reflected for the gunner into the day channel of the guidance system. He can switch the appropriate images on and off, but he can also observe a mixed optical and thermal image. For the crew chief the thermal image is depicted on a monitor.

The White Book of 1983 points out that sight limiting weather conditions, artificial smoke as well as smoke and dust limit the use of antitank rockets. Moreover, use of decoys, etc., must be taken into account. To solve this problem bilateral devices are currently being developed to make HOT rocket locators more reliable or to use thermal image devices to track the rocket to the target. These are to be used also in the PAH-1 and PAH-2. The NZBG and the devices to suppress interference are to be installed after the second general overhaul of the Jaguar 1 by component replacement or modification (Figure 11).

To meet the threat posed by the introduction of new opposing tanks beginning in about 1990 a bilateral development of a HOT-2 rocket is underway, designed especially to increase markedly the effect on the target. This improvement, including an increase in the caliber from 136 to 150 mm will be carried out in a way that existing and improved rockets can be fired with both existing and new weapons (such as the PAH-2). The HOT-2 rocket is to go into production in 1985. These planned measures for further enhancement of the JPz Jaguar 1 are designed to achieve desired performance with minimum modification, especially in order to achieve a cost effective solution.

#### Further possibilities for Jaguar 1 or HOT development

Depending on threat development and army planning, and time and cost considerations, the following performance enhancements are possible in the future:

--JPz Jaguar 1: Improvement of armor protection and minor modifications to chassis

--HOT: Improved WBG performance by optimizing common modules. In turn, this will improve guidance in the IR channel of the WBG. Possible use of digital guidance systems and image storage to permit flexible application. Improved performance of HOT-2 rocket with even greater effect on target, considerably greater maneuverability, increase in the effective combat range, and use of guide wires that can carry more information. No major modifications of the rocket are needed to effect these measures.

These improvements would naturally benefit not only the JPz Jaguar 1 but also other HOT-equipped carriers.

This illustration shows how a fielded weapon system/equipment was considerably improved in its performance and thus in its combat value. The important issue was to meet the threat by using technological advances.

Through bilateral cooperation in the development, procurement, and operation of the HOT antitank rocket system and the continued use of the tried and tested chassis that most cost effective solution could be found for the Jaguar 1 tank destroyer and the lifespan costs (development, acquisition and operating costs) could be kept low.

Table 1. Technical Data for Rocket Tanks Destroyer 2 and Tank Destroyer 1

		Rocket Tank Destroyer 2	Tank Destroyer 1
Length	m	6.43	6.61
Width	m	2.98	3.12
Height of hull	m	1.91	1.98
Height with extended rocket	m	2.75	2.54
Combat weight	t	24.5	25.5
Propulsion	kw	368 at 2200/min	=
Performance weight	kw/t	15.0	14.4
Speed forwards/backwards	km/hour	max. 75	max. 70
Grading ability	%(°)	58 (30)	=
Climbing ability	m	0.75	=
Trench transversing	m	2.00	=
Ground pressure	N/cm <sup>3</sup>	about 6.8	about 7.25
Cruising range	km	350-400	about the same
Fording depth	m	1.8	=

Table 2. Commanding of Rocket Tank Destroyer 2 and Tank Destroyer 1

	Rocket Tank Destroyer 2	Tank Destroyer 1
Observation devices	3 optical sights with front	Circle of optical
Optical mirrors	view attached to hull roof (to be used now in JPz1 by loader)	sights with 8 sights (full round view)
Pancratic crew chief periscope	Enlargement 3x to 15nx360° located to the side of the gunner's periscope sight	Same as RakJPz 2 Located besides crew chief cupola
Crew chief position	(squeezed) right next to gunner. Seat adjustable to limited extent	Right rear of battle station (crew is visible). Bucket seat adjustable in many directions with pedal
Additional duties of crew chief	Operating antiaircraft machinegun (very limited effective area) Front machinegun Radios	Operating antiaircraft machinegun (circular mount nx360°)

Table 3. Technical Data for SS 11 A1 and HOT Rockets

		SS 11 A1 (SS 11 B1)	HOT
Weight	kg	29.9 (without cover)	32 (in start tube)
Length	mm	1209	1300
Diameter	mm	164	175
Caliber	mm	164	136
Warhead		Shaped charge	
Warhead weight	kg	8.1	6
Wingspan	mm	500	retractable fins
Effective range	m	approx. 800-3300 (600-3000)	approx. 75-4000
Penetration	mm	approx. 500/0°	more than 800/0°
Average speed	m/sec	140(150)	245
Flight duration (maximum effective range)	sec	approx. 25 (app. 20)	approx. 17
Reliability	%	? (also depends on crew)	more than 95
Steering		4 jet blades (jet adjustment)	Jet rudder (=)
Data transmission		2 guide wires	1 guide wire
Propulsion		Start and cruising engine (propulsion over entire flight)	=
Rocket parts		Body Warhead On-board batteries Locking cartridge	Rocket in starting tube (Ammunition characteristics)

Table 4. Effect of SS11 A1 and HOT Systems

	Rocket Tank Destroyer 2	Jaguar 1 Tank Destroyer
Hit probability	60%	90%
Firefight from-to (distance)	3000-1500 m	4000-1500 m
Firefight duration	300 sec	500 sec
Rate of fire	1 rocket/min	2.5 rockets/min
Number of rockets fired	max. 5	max. 20 (combat load)
Number of tanks hit	3	18

Bild 1 Hauptbaugruppen des Raketenadpanzers 2

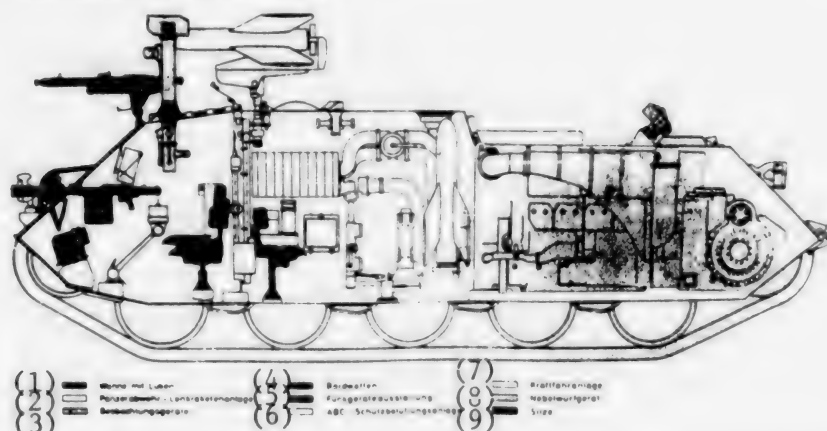


Fig. 1 Main Construction Groupings of Rocket Tank Destroyer 2

Key:

1. Hull with hatches
2. Antitank rocket device
3. Observation gear
4. Organic weapons
5. Radio equipment
6. NBC protective ventilation system
7. Power train
8. Smoke projectile catapult
9. Seats

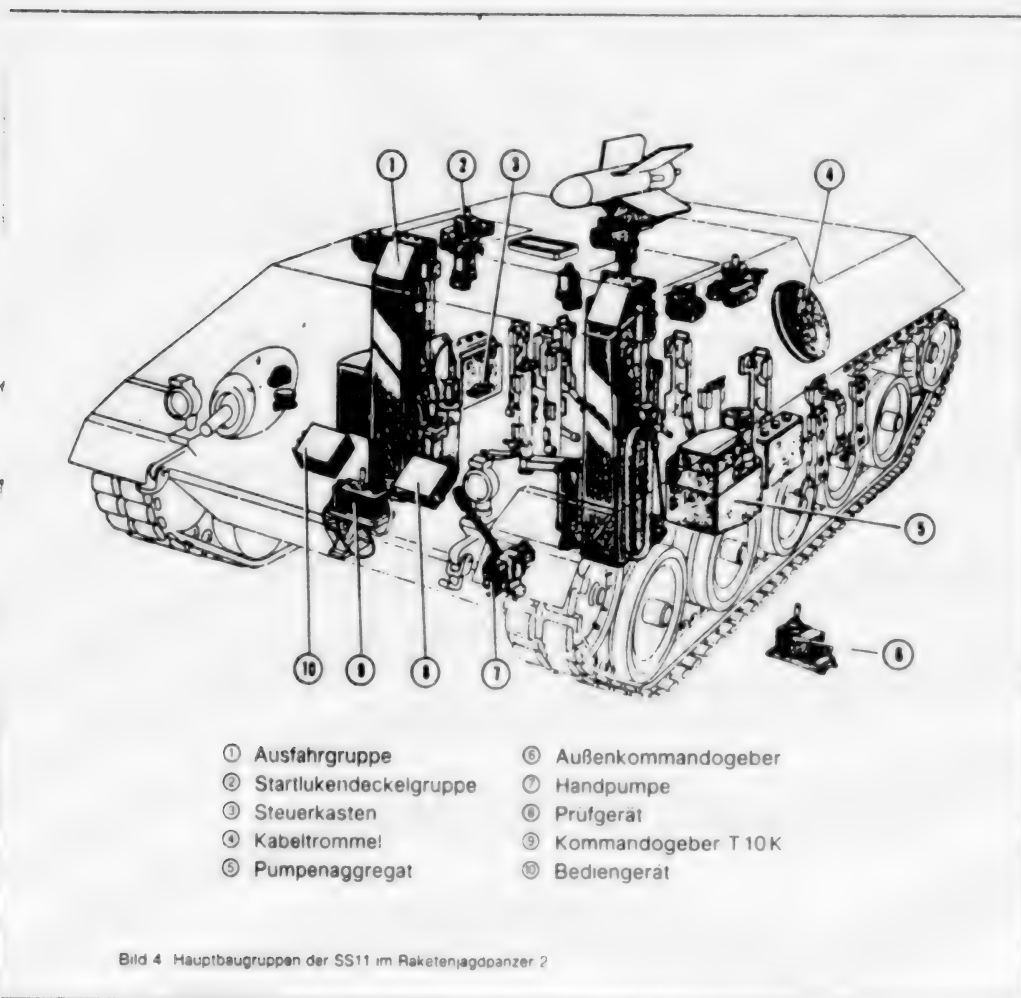


Fig. 4 Main Construction Groupings of SS 11 in Rocket Tank Destroyer 2

Key:

1. Elevator group
2. Starting hatch cover group
3. Steering box
4. Wire drum
5. Pump assembly
6. External command transmitter
7. Hand pump
8. Testing device
9. T 10 K command transmitter
10. Control panel



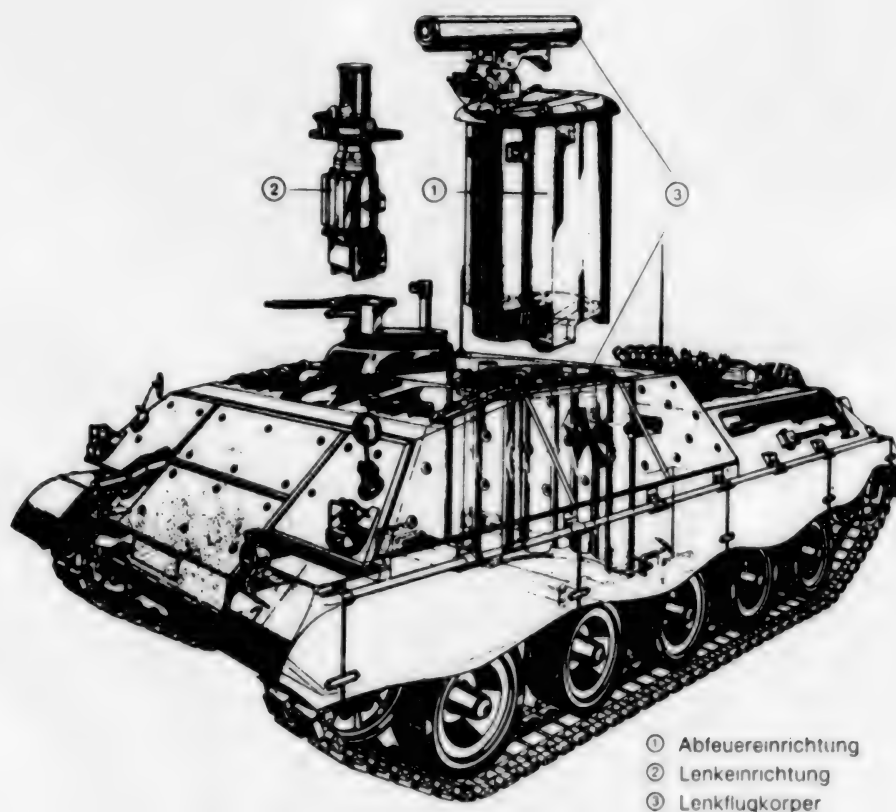
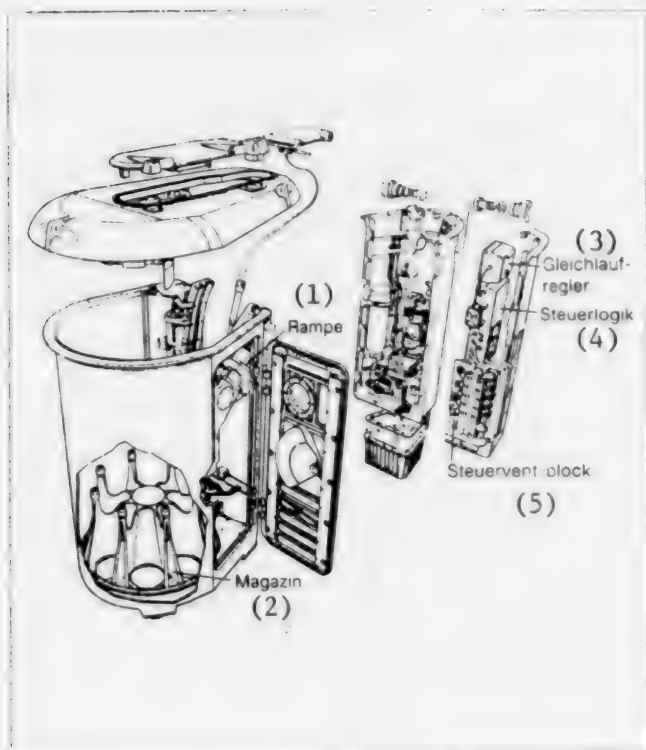


Bild 5: Waffenanlage und Lenkflugkörper HOT im Jagdpanzer 1

Fig. 5 Weapon Equipment and HOT Rocket in Tank Destroyer 1

Key:

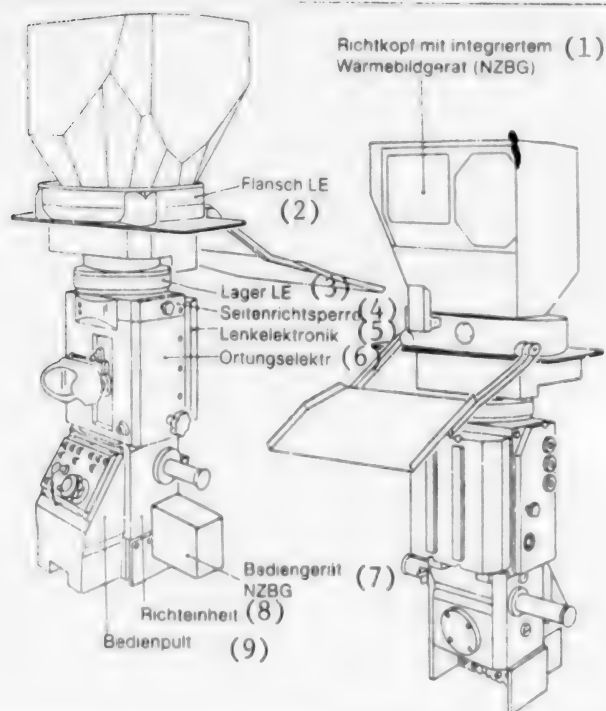
1. Launching system
2. Guidance system
3. Rocket



Key:

1. Ramp
2. Magazine
3. Synchronizer
4. Guidance logic
5. Guidance servo

Fig. 6 Launching System of Tank Destroyer 1



Key:

1. Aiming head with integrated thermal image device (NZBG)
2. LE flange
3. LE bearing
4. Side aiming lock
5. Guidance electronics
6. Locator electronics
7. NZBG controls
8. Aiming unit
9. Control panel

Fig. 7 Groupings of Guidance System (LE) With Integrated Night Target and Observation Device (NZBG)

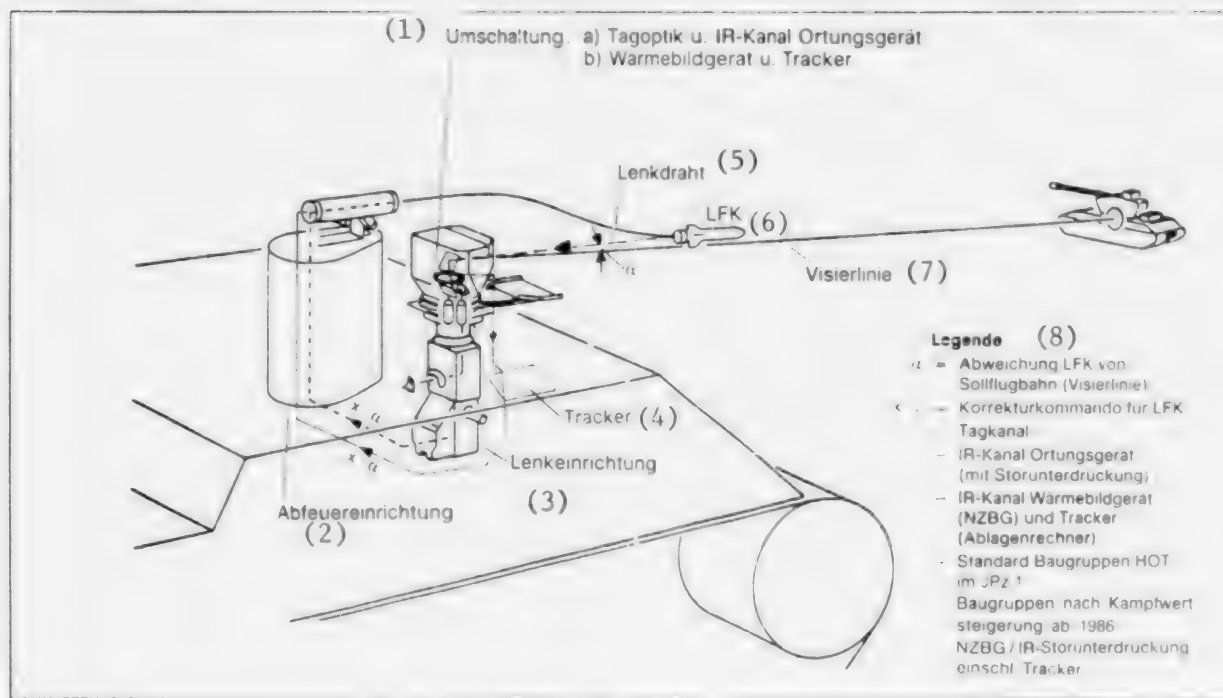


Bild 11. Prinzip der halbautomatischen Kommando-Lenkung mit Störunterdrückung

Fig. 11 Principle of Semiautomatic Command Guidance With Interference Suppression

Key:

1. Switching: a) Day optics and IR channel locator device  
b) Thermal image device and tracker
2. Launching mechanism
3. Guidance system
4. Tracker
5. Guidance wire
6. Guided rocket
7. Line of sight
8. Legend:
  - a = Deviation of rocket from designated flight path (line of sight)
  - x.a = Correction command for rocket
    - Day channel
    - IR locator device (with interference suppression)
    - IR channel thermal image device (NZBG) and tracker (deviation calculator)
    - Standard HOT units in JPz 1
    - Construction groups after enhancement, beginning 1986: NZBG/IR interference suppression including tracker

## Modifications to Jaguar 2

Frankfurt/Main SOLDAT UND TECHNIK in German Jun 85 pp 344-346

[Article by Lt Col Juergen Zoeller: "Tank Destroyer Jaguar 2: Development, Mission Concept, Performance Characteristics"]

[Text] The project Jaguar 2 is currently in the procurement phase. The tank destroyer force will be equipped with 169 combat vehicles of this type. The number includes the requirement for 11 tank destroyer companies as well as for training installations, and includes a maintenance float. The first Jaguar 2 was delivered on 2 December 1983. By the fall of 1985 all tank destroyers will have been delivered. Besides the above-described Jaguar 1 the tank destroyer force will thus have another high performance tank destroyer model and will close an equipment gap that opened after restructuring according to Army Structure 4.

### Development

In the summer of 1976 the possibilities for further use of weapon systems scheduled for replacement in the out years in their current configuration were discussed. It was decided to develop the tank destroyer with a 90-mm gun (KanJPz) (Figure 1) into a rocket-equipped tank destroyer without major technical changes. The TOW (tube launched, optically tracked, wire command link guided) rocket was to be adopted as the main weapon and was to be shielded against shrapnel. A turret solution was not envisioned. There were to be no technical modifications to the weapon. The crew was to be able to fight predominantly under armor protection.

Of decisive importance for the development were the facts:

- The TOW is already used by the Bundeswehr; there are adequate depot supplies.
- The chassis of the KanJPz can continue to be used after the 90-mm gun has been removed.
- The union of these already fielded devices will result in a cost effective armored combat vehicle with a satisfactory combat power, one that meets the military requirements.

Subsequent development that began in 1978 had to be halted in 1979 since the desired goal of the development could not be technically realized within justifiable economic limits. The project was thus returned to the definition phase. The military requirements were revised and changed to the extent that the requirement to shoot from armored cover was abandoned. The newly commenced development of this simplified and cost saving solution was successfully concluded and the first tank destroyer, named "Jaguar 2" was issued on 2 December 1983.

This example shows that enhancements need not necessarily be less complicated, labor and time intensive and less plagued by risks than new developments, especially not when technical, financial, and material limits must be categorically observed.

#### Concept of Use

The Jaguar 2 tank destroyer is incorporated into the antitank concept according to the following principles:

- Tank destroyers are used within armored combat units. They fight thus under the same conditions as battle tanks and APC.
- Tank destroyers accompany and guard tanks and mechanized infantry in the attack; in the defense and delay they are to commence the firefight of the armored force at a great range and thus degrade the enemy before he commences his fire on the main body of the armored force.
- In accomplishing these missions the antitank gunners use the superior range of the guided antitank rockets of their tank destroyers to destroy enemy tanks already at distances where tank guns cannot yet function effectively. Thus tank destroyers function in all areas which are still or already out of the range of all other direct fire weapons but still within the field of sight.

#### Description and performance characteristics

The Jaguar 2 tank destroyer is a combat vehicle for antitank troops, developed for antitank missions. Its main components are:

- the refurbished chassis of the KanJPz,
- the U.S. TOW rocket with
- a U.S. thermal imagery device AN/TAS-4
- a newly developed installation set
- newly developed external and auxiliary electric supply and
- observation facilities.

The Jaguar 2 is a fast, very maneuverable, fully tracked vehicle with a high degree of mobility. During the battle it is able to redeploy rapidly in any terrain. It has additional armor and track skirts. Its main weapon is the TOW rocket of which it has a supply of 12 on board. The thermal image device attached to the weapon allows it to fight at night. It can be used in limited visibility. With the thermal image device camouflaged targets can be detected during daylight. An anti-aircraft machinegun is carried as a secondary weapon which can be attached to a circular mount either above the crew chief's or the loader's hatch. The vehicle has a smoke generating projectile catapult.



The installation set (Figure 4) was developed to accept the main weapon and its ancillary parts. It consists of:

- a hydraulic lift,
- a gunner (operator) stand,
- mountings for the weapon guidance devices and for ancillary equipment and
- rocket mounts.

The weapon and thermal image device are supplied with electricity from the vehicle's electrical system through a connector (located in the guidance device of the weapon). In case of failure of the on-board electrical system or during dismounted action (exceptional case) electrical current is provided by a NiCd battery set (emergency current). The TOW tripod is carried along to operate the easily dismounted weapon from the ground in case of vehicle failure.

The crew of the Jaguar 2 consists of four soldiers--crew chief, driver, gunner, and loader. To observe the battlefield both the chief and the gunner have a monocular, extendable, retractable and rotating periscope, while the loader has swiveling side mirrors. The forward side mirrors of the driver and the crew chief can be replaced by BiV [expansion unknown].

On the march and during the observation phase crew and weapon are under full armor protection. The weapon can be loaded under the armored roof--i.e., under armored condition--in a lowered position.

During the combat operation the TOW, including the guidance unit, optical visor, thermal imagery device, and start tube, is raised by the hydraulic mount above the armored roof. A three-part weapon hatch has to be opened in order to operate the weapon. The gunner moves from his position under the armored roof to the gunner's stand behind the weapon. He is partly protected by the side panels of the hatch. The rest of the crew stays under armored cover.

#### Enhancement of the TOW rocket

Initial measures were taken to adapt the TOW of the Jaguar 2 to the future threat. For better understanding a description of the currently used weapon and ammunition will precede an outline of the improved performance to be achieved by enhancement. The basic principles of the weapon structure and use will not change in the enhancement.

The TOW rocket is part of the second generation of antitank guided rockets. Its main components are:

- An aiming device for vertical and horizontal sighting,
- An optical visor with an infrared goniometer,
- A thermal imagery device,
- The guidance system (guidance electronics) with an integrated external current supply,
- A start tube for the rocket, and
- A tripod for use of the weapon on the ground.

The rocket is located in the start tube which is also the packing tube. The start tube is placed and locked in the aiming unit. The weapon is charged.

In engaging a target the gunner must cover the target with the hairlines in the sight (day optics or thermal image device) and keep it covered during the flight. Guidance electronics maintain the rocket on the aiming line. Commands are submitted by wire. The rocket has a start and cruising engine. The starting engine propels the rocket from the start tube and the cruising engine brings it to its maximum speed. After engine cutoff the rocket flies without propulsion.

The enhancement process will result in the following performance improvements:

--Higher probability of destruction of modern targets by new, improved performance rocket (TOW-2, Fig. 5),

--Greater reliability.

--Greater hit probability at reduced vision, and

--Range increase from 3,000 m to 3,750 m.

The enhancement is essentially achieved by exchange and modification of components. Technical and time requirements for retrofitting are minor. In comparison to new development this measure will result in considerable cost and time savings. With the enhancement of its weapon the combat power of Jaguar 2 increases at a favorable cost/benefit ratio. The Jaguar 2 tank destroyer will thus be an effective antitank device in the ranks of the armored forces until the next decade.

Table 1. Technical Data and Performance Characteristics of Jaguar 2

Vehicle	
Length	6.61 m
Width	3.12 m
Height	
Weapon retracted	1.90 m
Weapon extended	2.86 m
Combat weight	25 t
Range	
Highway	350-400 km
Cross country	approx. 150 km
Weapon	
Vehicle-adapted antitank weapon	
Guidance	Semiautomatic, IR guidance, commands transmitted by wire
Guided rocket	
Range	3,000 m
Warhead	Shaped charge
Propulsion	Start and cruising engine
	Solid fuel engine
Steering	Aerodynamic rudder
Thermal image device	
Wavelength	10.6 microns
Electrical cooler	
Use of U.S. common modules	

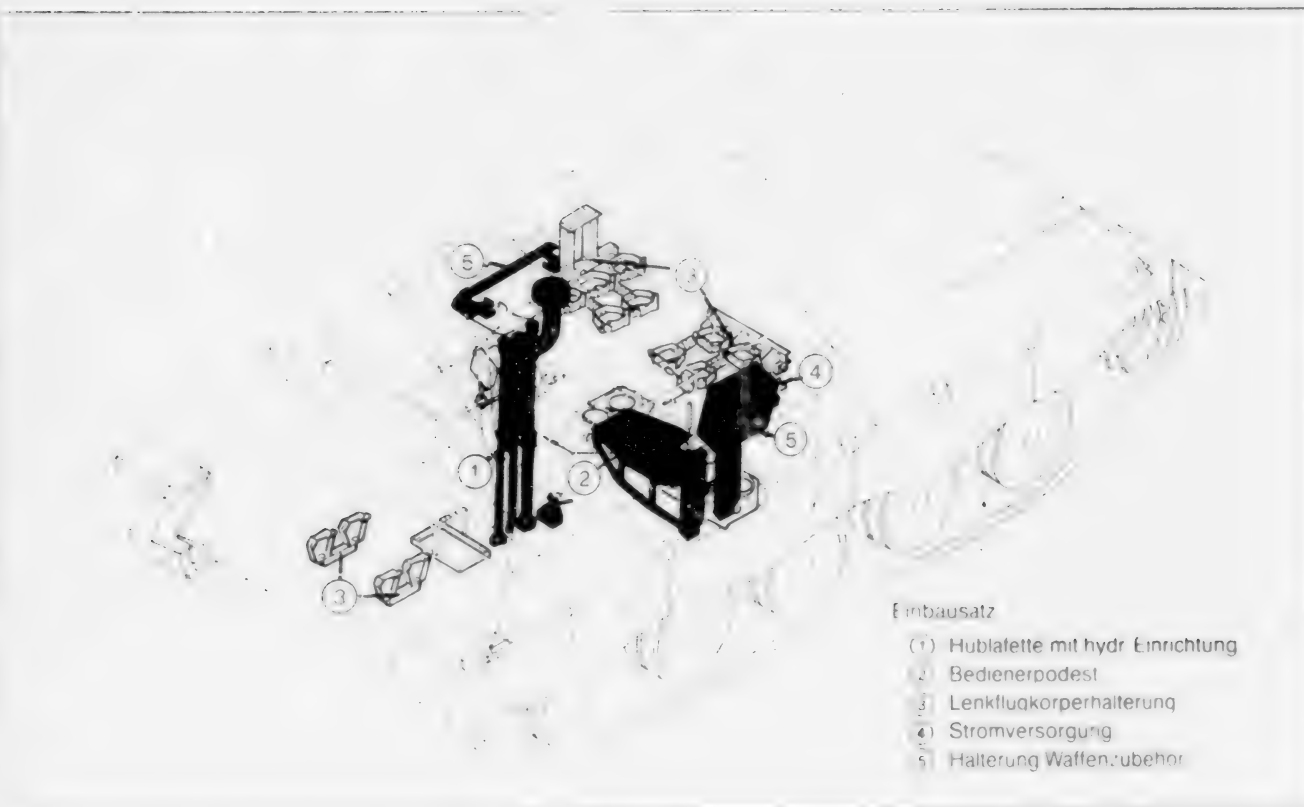


Fig. 4 Installation Set in Jaguar 2 Tank Destroyer

Key:

1. Launcher with hydraulic equipment
2. Operator stand
3. Rocket mounting
4. Electrical supply
5. Ancillary equipment mounts

Armored Artillery Overhaul

Frankfurt/Main SOLDAT UND TECHNIK in German Jun 85 pp 350-353

[Article by Lt Col Erich Neugebauer: "Enhancement: M 109 G Armored Howitzer, M 110 SP Howitzer, M 107 SP Gun"]

[Text] The Warsaw Pact constantly increases its combat power by introducing new, modern weapon systems, modernizing existing weapon systems, and increasing their number. Thus the threat to NATO defensive forces increases to an extent requiring countermeasures. For example, from the point of view of the Bundeswehr an average enemy superiority in artillery in the case of an attack by Warsaw Pact forces can be assumed to be 5:1, even 7:1 in the axis of the

attack. In any case part of that artillery will be used to directly engage the defender's artillery. This threat to friendly fire support forces increases further when the Warsaw Pact applies more modern reconnaissance, command, ammunition, and weapon techniques to its artillery. Even when the Bundeswehr procured the M109 armored howitzer from the United States in 1964-65 and again later in 1972-73 it could be seen that the weapon would not meet the threat for long; a replacement with a yet to be developed armored howitzer that would continue to meet the threat was scheduled for the mid-80's. Further deliberations on how the artillery could react to the constantly growing threat culminated in the "Artillery Structure 86" which again contains a higher number of armored howitzers. Since other NATO countries also arrived at similar conclusions, Great Britain, Italy, and Germany agreed in the early 70's to a joint development of a new armored howitzer. However, it soon became clear that procurement of new armored howitzer in the number envisioned by the Artillery Structure 85 would exceed the financial barriers. Thus there arose the need to use the M109 howitzer longer than originally planned.

At approximately the same time that Germany procured the first M109 howitzers it also bought two other types of weapons in the United States, namely the 203-mm self-propelled howitzer (M110) and the 175-mm self-propelled gun (M107). The useful lifespan of these weapons had originally been estimated to be the same as that of the M109. But the above-mentioned considerations regarding the new artillery structure also included the M107 and M110. Here, too, a retirement in the mid-80s was foregone and an extension of the lifespan was decided on in connection with a caliber adjustment.

The outlined deliberations and conclusions only involve weapons but time did not stand still for ammunition either. Developments in that field were designed to make feasible or improve action against armored targets. Thus rounds with shaped charge bomblets and rounds with projectile forming submunitions are in various stages of development or procurement for both calibers.

Another reaction to the increased threat are the attempts to improve reaction time. The artillery command, information and fire direction system allows the artillery to bring aimed fire to bear on targets faster and with greater accuracy by use of "integrated fire direction measures" (IFAB).

#### Retrofitting and enhancement of M109G armored howitzer

In the early 1960's when it became clear that the Bundeswehr artillery, consisting primarily still of guns dating from World War II or the Korean War, was hopelessly outdated and no longer met the threat the decision was made to purchase a sizeable number of M109 in the United States. After the necessary preparatory talks and conclusion of agreements 347 M109 were first bought in 1964 and 1965, and an additional 240 in 1972-73.

Even at that time the M109 no longer represented the achievable technical standard in the German view; moreover, some changes had to be made for its use by the German Army. Thus there was a chance and a need for improvements and retrofitting. These led to the M109G (G=Germany). The modifications included in the so-called "Germanizing" were:

- Installation of a German tube and ancillary parts and thus an increase in the range from about 14 km to about 18 km.
- Increased cadence due to a different breech mechanism.
- Installation of a new aiming device.
- Installation of German communication system.
- Adaption of a smoke projectile thrower.
- Adaption of a German track, and
- Adaption of a German antiaircraft machinegun.

In connection with the purchase delivery by the United States of U.S. components was guaranteed until 1985.

Since the same principle holds true for armored howitzers as other weapons, namely, that succession has to be secured already during the useful lifespan, work was started as early as the 70's on development of a new armored howitzer. Here Germany became a partner of Italy and Great Britain, the new armored howitzer is designated the PzH 155-1. Originally there were plans to replace all M109G with the PzH 155-1 beginning in 1985. Current plans, including the Artillery Structure 85 call for equipping all brigade artillery battalions with the 155-mm armored howitzer, i.e., the need for armored howitzers has increased in the meantime to almost 900. This circumstance, along with delays in the development of the PzH 155-1 and with clear limits to procurement planning, gave rise to new deliberations. Following the model used in procuring a new battle tank the Army's Chief of Staff decided in 1979 to procure only about 50 percent of the planned number of PzH 155-1 and to cover the remaining need for armored howitzers by extending the useful life of a corresponding number of M109G until 2005. This procedure was called a "semigenerational replacement."

The following problems arose from a prolonging of the useful life by 20 years:

- The United States had since 1963 modified the M109 in stages into the M109A1 and then into the M109A3. These modifications had not been carried out on the M109G.
- For technical and tactical reasons not all U.S. MWO (Modification Work Orders) had been performed on the M109G over the last 15 years.
- Supply of the old M109G spare parts was assured only until 1985 and was not guaranteed beyond that point.

Thus the supply security alone demanded a retrofitting. At the same time the German artillery demanded for obvious reasons that the modifications should, if possible, be combined with enhancement. This was to increase the range from 18 km to 24 km (up to 30 km with accelerated rounds) and assure that all 155-mm ammunition with all charges could be fired.

After investigating and evaluating various possible solutions and estimating the resources available the requestor decided on retrofitting with simultaneous enhancement that included the following parts:



#### U.S. components:

Turret: Ammunition magazine, propelling charge rack, door seals, ballistic hood for the panoramic periscope, lateral aiming gear, compensation device/vertical aiming cylinder, gun shield sealing, mounts for equipment, various retrofitting for series adaptation (slip ring reducer, conductor rail, etc.).

Hull/engine: Tube lashing, ventilation system, air filter system, instrument panel (driver), turbocharger system, reinforced torsion bars, driver hatch seals, engine exchange, and driver operation device in battle station.

#### German components:

Complete tube with parts: tube, reinforcement elements for muzzle brake, smoke evacuator, dust cover, optimized gasket system and modified rotation force.

Turret: Metrical hydraulic system and hydraulic motor for lateral aiming mechanism (Leopard 1).

M109G parts (continued use): Breech system, deflector, muzzle brake, aiming device with target indicator, armored sighting and panoramic periscopes, improved tube brake elements, gun chief's cupola, antiaircraft machinegun mount, anti-aircraft machinegun, seat for crew chief, ammunition mounts, shield seal, radio device, smoke projectile thrower and German tracks.

#### The described solution enables:

--Incorporation of U.S. supply and thus assurance of operability of the guns; this is especially true for the chassis that was completely retrofitted to A3 standards.

--Firing of all existing or developmental ammunition categories of the 155-mm ammunition family by using the new tube (modified 155-1 tube) and thus increased range of 24 km (or 30 km with long-range round) within the ballistic requirements of the 155-1 field and armored howitzers and within the quadrilateral (U.S., UK, IT, and GE) ballistic agreement for 155-mm ammunition.

--Cost effectiveness through continued use of tried and continuously available German parts, and

--Improvement in reliability and uses of the weapon by installation of metrical hydraulic devices with connections for filtering, testing, and flushing, a new hydraulic motor for lateral aiming (Leopard 1), a new electrical trigger, and German data receiving and display devices.

After a sample retrofitting by Rheinmetall there were extensive factory trials, technical tests as well as a tactical troop trial and logistical inspection in 1983. The correctness of joining parts of the U.S. modification kits with tried German components was clearly established.

After declaring a state of technical maturity and troop applicability the General for Army Weaponry on 16 May 1984 issued to license to introduce the PzH M109A3G. Retrofitting of the M109A3G takes place at the 860th Army Maintenance Plant at St. Wendel and is scheduled to start in late 1985. The first pre-series weapon was finished there already in May 1984, on 14 September 1984 a M109A3G was introduced at a small presentation ceremony to representatives of the units and offices of the 860th Army Maintenance Plant. The retrofitting plan calls for conclusion of the action by 1989.

Retrofitting and enhancing of M110 (203-mm) SP howitzer and M107 (175-mm) SP gun

Problems similar to those of the armored howitzer M109 occurred in the late 1970's with other weapons purchased in 1962 in the United States:

--M110 203-mm SP howitzer and

--M107 175-mm SP gun.

These weapons are found in divisional field artillery battalion, with 75 M110 howitzers and 150 M107 guns (including war reserves and maintenance float).

In the 1960's and 1970's modification kits were developed, tested and introduced in the United States. Together with development and introduction of new kinds of ammunition they led to considerable enhancement of the weapon systems. Included was a caliber equalization to 203-mm.

In 1979 the Army Chief of Staff decided to perform this enhancement on all 225 weapons of the Bundeswehr; the appropriate introduction authorization was approved on 11 February 1980 by the state secretary. To carry out the enhancement which was designed to prolong the "lifespan" until about 2005, modification kits had to be obtained. There were the ModKits 3 A and 3 B as well as ModKit 4; kits 3 A for the M110 SP howitzer and 3 B for the M107 SP gun differed only in unimportant details due to the great similarity between the M107 and M110. The ModKit 3 A/B included the following:

--An 8.26 m long (203-mm) M201 tube without breech and breech mechanism (the breech of the previous 203-mm and 175-mm tubes was retooled and screwed to the new tube after an exchange of two parts);

--An increased loading chamber (in the tube) of now 32 dm<sup>3</sup> volume, and

--Various tables and a new vehicle type plate.

The Kit 4 included essentially a muzzle brake weighing about 200 kg including a protective cover.

With the installation of the ModKits the following improvements were achieved: The new longer tube with a larger loading chamber permits firing of all kinds of ammunition (including those in development) with the new stronger charge 9. This results in an increased effect on the target and an increased range from the previous 17.5 km to 22.7 km (30 km with booster). There is also a prolonged tube life of 1,500 rounds from 400 rounds (in the M107) tanks to the self-scrubbing chrome-plated tube, and improvements to chassis and hydraulics. The new muzzle brake (Kit 4) was needed to avoid exceeding the system's tube recoil when charge 9 was used. This resulted in the following improvements to the weapon and its use that were desired or requested by the requestor:

- Operability increased, the M107 gun had been especially prone to failure;
- Possibilities for fire concentration increased (same caliber, same mission principles);
- There is the possibility of using improved ammunition and thus have a better effect on the target;
- Cross-supply of ammunition among NATO partners was facilitated, and
- Supply was secured up to approximately 2005.

Simultaneous with these improvements the M110A2 SP howitzers are equipped with a weather shelter developed in Germany. This allows to shield the otherwise open battle area and operate the weapon even in rain and snow under tolerable conditions. This enhancement of the M110 SP howitzer was also carried out in the 860th Army Maintenance Plant at St. Wedel in connection with a scheduled general overhaul, something that is planned from the M109 howitzer also. It involved originally not all 225 pieces, since a small number of them will continue to use the 175-mm tube to expend the stocked 175-mm ammunition in training. However, modification kits for these pieces are ready.

#### Armored Engineer Vehicle Improvements

Frankfurt/Main SOLDAT UND TECHNIK in German Jun 85 pp 354-357

[Article by Lt Col Christian Kontny: "Enhancing Armored Engineer Vehicle 2"]

[Text] In a future battle the German Army must reckon with an enemy having a large quantitative superiority in tanks and artillery, and outstanding complement of bridges and mine clearing equipment to maintain mobility, and a marked air superiority. Moreover, it must be considered that night vision and intelligent ammunition will be available in the 1990's. This threat spectrum means that our technologically mostly superior but numerically inferior weapon systems will be threatened on the battlefield in an unprecedented manner. Complete protection from the threat at all times and in all places is not possible. However, tactically correct action and the existence of armor protection and smoke generators could diminish the risk. The most effective way to increase friendly survival is to construct positions for mission essential weapon systems.

In addition to improved survivability the engineers have the mission of hindering enemy movements and facilitating friendly movements.

Meeting of this task is not possible without high-performance engineer machines.

Here the following important tasks come to mind:

--Position construction, above all building shelters for mission-essential weapon systems, reinforcing terrain obstacles and digging foxholes.

--Ground work, such as building loading and unloading ramps and entry and exit-ways into and out of water, filling craters, ground grading.

--Clearing tasks such as clearing roadways in case of destruction and devastation, removing barricades and similar obstacles, penetrating dikes.

--Loading of debris and dirt, especially for removal.

These tasks must in part be carried out under combat conditions with earthmoving and clearing operations sometimes having to take place in or near the water. To meet these tasks a number of specialized machines was procured, each optimized for the particular mission. Thus the inventory of engineer first generation equipment included:

- Armored engineer vehicle 1
- Tracked engineer bulldozer 60 PS on ramp loader
- Tracked ground grader 160 PS on tank transporter
- Excavator bulldozer on tank transporter
- Trench digger
- Tracked excavator
- Ground grader
- Swing digger
- Field labor device.

This motor pool resulted in considerable problems regarding training, logistics, availability, organization, and tactical usefulness. Of even greater importance was the fact that there was no suitable machine to meet the many tasks on the battlefield. The armored engineer vehicle 1 was available in small numbers, and strictly speaking it was not really an armored engineer vehicle but rather a tank retriever 2 whose front blade had been enlarged and the winch had been replaced by the so-called ground drill for making foxholes.

As the time for replacing the first generation engineer vehicles drew near a new engineer vehicle concept was developed. It provided for covering the entire spectrum of responsibility with considerably fewer engineer machines, but these were to have a broader sphere of application and greater performance. The advantages include reduced personnel requirements, higher usefulness in combat, reduced maintenance costs, easier repairability and consequently greater availability, and reduced procurement costs. This led to a requirement for the following machines:

--Armored engineer vehicle (GPM), a universal machine to cover the entire mission sphere on land and in the water with armored and NBC protection. Level of use: Brigade.

--Multiple use bulldozer: A high-performance device for the entire mission sphere but with no armor or NBC protection and not suited for use in water, loaded on a tank transporter. Level of use: Division and corps.

--Wheeled grader: Mobile wheeled vehicle for earthwork and clearing operations in light and medium soils. Level of use: Division and corps.

After the wheeled grader was delivered from 1979 to 1984 to the troops and the decision had been made to procure a conventional multiple use bulldozer in the second half of the 1980's the armored engineer vehicle (GPM), referred to below as Engineer Tank 2 (PiPz 2) will be described.

#### Requirements for the new armored engineer vehicle

Development of an armored engineer vehicle was based on a military requirement dating from 1967 which became acute in 1973 with the creation of the bridging and traversing system, and was issued as a tactical requirement. Two different prototypes were developed on the chassis of a Leopard 1 battle tank. These met the requirements of the requestor, and a model with two telescoping dredges was selected for development. After the engineer branch had been supplied with only a small number of Armored Engineer Vehicle 1 in the expectation of development and procurement of the GPM development came to a halt in late 1970's partly for technical, partly for conceptual, and partly for financial reasons. However, at the same time the decision was made in connection with the planned development of a tank retriever 3 to equip the engineers with another 104 tank retrievers in addition to the 36 armored engineer vehicle 1 which were to be improved within a certain financial volume into a high-performance armored engineer vehicle 2.

After thorough research proved the technical feasibility, the development of the PiPz 2 commenced in 1981 with the retrofitting of PiPz 1 and BPz 2. To the greatest extent possible experiences made with the GPM were applied. Thus development risks could greatly be reduced in technical, time-related, financial, and tactical areas. The development was based on the original requests for a GPM which had to be adapted to new technical and financial factors.

The new PiPz 2 also was to cover the already mentioned spectrum of fortification, earthmoving, clearing and loading with armor protection and partly in water. Moreover, it was to have tools that could:

- tear open hard surfaces,
- conduct lifting,
- retrieve and tow other vehicles, and
- perform cutting and welding.

It goes without saying that some deletions had to be made in the original requests. However, important requests could not be abandoned. This is all the more remarkable since in addition to the categorical demands for maintaining the



financial limits and using PiPz 1/BPz 2 chassis a further condition was added, namely that the volume of modifications had to be as small as possible in order to keep the number of logistically identical parts of Leopard 1 and tank retriever 2 as large as possible. Also, the combat weight of 43 t could not be exceeded so that an unrestricted license according to the highway traffic order could be issued.

One requirement which will always be put forth whenever opportunity arises will not be met by the new PiPz 2: removal of large amounts of snow. For that purpose special equipment is required in any case.

#### Enhancement measures on the armored engineer vehicle 2

Late in 1983 the first prototypes were built and after successful factory trials in 1983 went into technical testing and troop trials that have in the meantime been successfully concluded. Experience to date indicates that the object of the development will be achieved and that the armored engineer vehicle will be delivered to the troops as a high performance engineer tool.

The significant modifications and improvements that make a PiPz 1/PPz 2 into a PiPz 2 include the following (Figure 5):

- telescoping arm dredgers,
- clearing blade,
- hydraulic system,
- cutting and welding equipment,
- cable takeup,
- flushing device to clean radiator,
- swiveling sight for crew chief and driver,
- remote control of the dredger,
- additional bilge pumps.

The telescoping arm dredger that replaces the winch permits dredging as well as loading and lifting. In comparison to the swivel arm dredger it is the better solution since it is easier to operate, costs less, and is better suited to climb an opposite bank.

The clearing blade consists of a blade with push angles and extending side panels attached to the blade. The angles make the pushed dirt loosen from the blade, thus reducing friction. This means less effort, relieving the PiPz 2 engine. The side panels of the blade prevent dirt from reaching the tracks. The side panels were up to now carried in the rear of the PiPz 1 and had to be attached with expenditure of time and effort. For that reason they were sometimes "forgotten." This will no longer be the case with extending panels.

A possibility for a hydraulic cutting angling of the blade was realized in the first and second prototypes. Initial test data show that the disadvantages with regard to blade stability and additional costs are not outweighed by the advantages especially in engine protection. A rigid blade with a three-position mechanically adjusted cutting angle was selected for prototype 3. Indications are that this will be the final solution.

The dredger and the blade--the core of the PiPz 2--receive their energy from a new hydraulic system which is operated electro-hydraulically with constant pumps and an operating pressure of about 300 bar. The new steering allows for simple operation since the operating levers are ergonomically in a better position and their number was halved. This is the hydraulic system used in modern dredgers and one that is also to be used in tank retriever 3.

The cutting and welding system is predominantly used to cut through reinforced concrete and steel bars. The usefulness of PiPz 2 is considerably improved since instead of the former 24 V external power source there is now a 50 V welding connection to the vehicle's generator with which the welding voltage can be regulated in a conventional manner.

The cable takeup was improved by increasing cable tension with additional rollers. This is to prevent or at least reduce uneven takeup and jamming of the cable in the drum. Further sealing measures are designed to permit extension and takeup of the cable even underwater. Installation of a modern high performance spill winch had to be foregone primarily for cost reasons.

A flushing device for the radiator for engine oil and hydraulic fluid enables to operate the PiPz 2 continuously even in very dirty water.

The crew chief cupola and the driver hatch were equipped with swiveling mirrors in the functional areas. Together with the four fixed mirrors and uninterrupted observation of the equipment is possible under armored and NBC protection.

An extension cable permits operating the cable from a diving shaft or from outside the PiPz 2. This expanded operability will be especially useful, for example in training or delicate jobs.

Additional high performance bilge pumps reduce the possibility of failure while operating in water and thus contribute to crew safety.

A small bitter dash should not be overlooked: Since retrofitting will take place on the basis of overhauled but in the final analysis still the old BPz 2/BiPz 1 chassis the troops must count on a somewhat smaller flexibility than would be the case with a new chassis. However, this should not diminish the conviction that with the procurement of 140 PiPz 2 the troops will for the first time have a device that can fulfill the many requirements for engineer support in combat. Thus an equipment gap lasting for years will be closed.

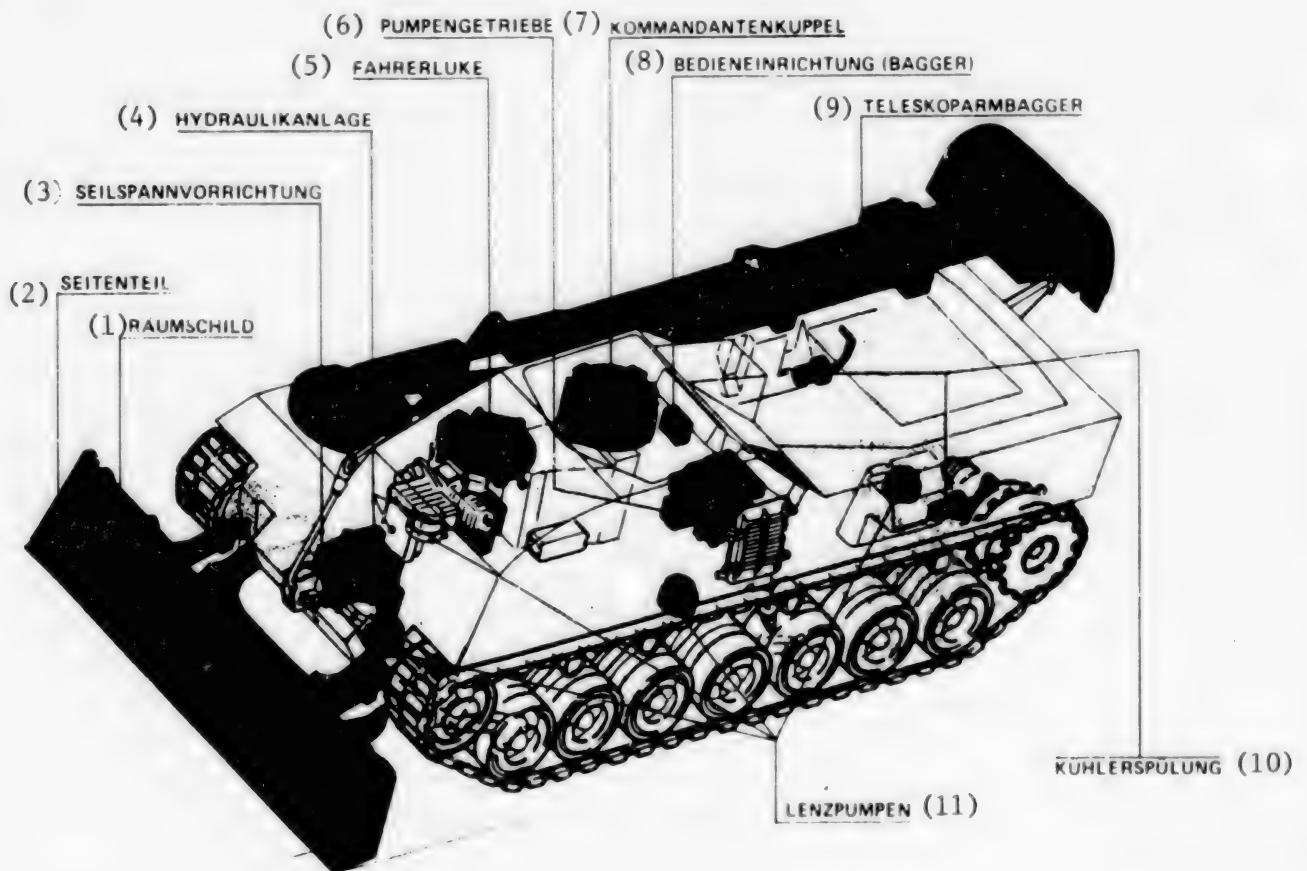


Fig. 5 PiPz 2. Schematic Outline

Key:

1. Blade
2. Side panel
3. Cable uptake
4. Hydraulic device
5. Driver hatch
6. Pump drive
7. Crew chief cupola
8. Control panel (for dredger)
9. Telescoping arm dredger
10. Radiator flusher
11. Bilge pumps

Bild 9 PiPz 2 Einsatzspektrum

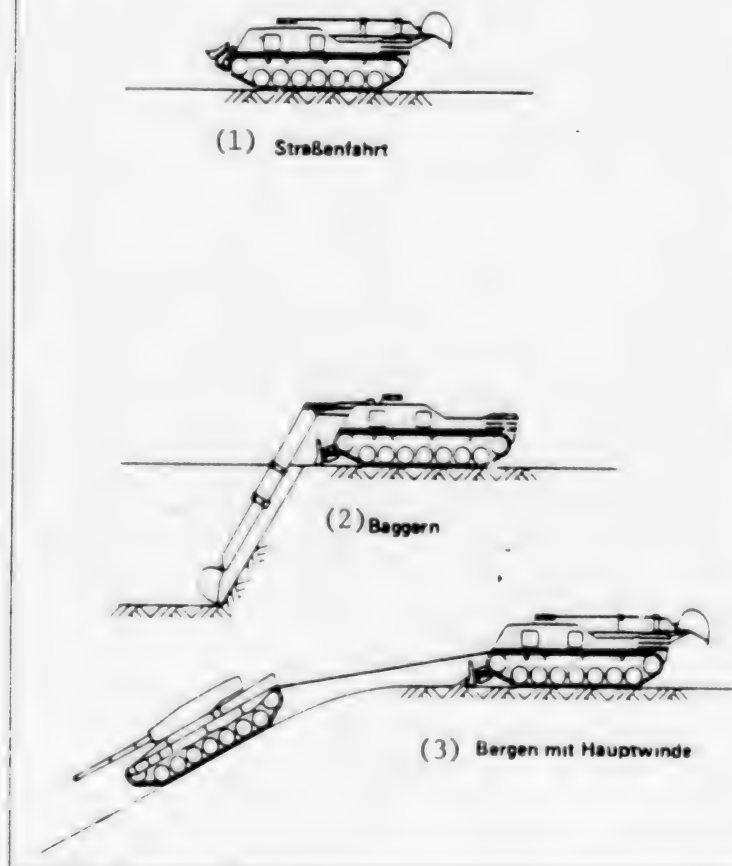


Fig. 9 Uses for PiPz 2

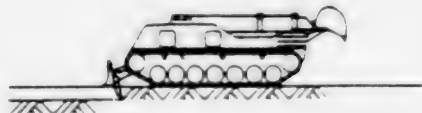
Key:

1. Street travel
2. Dredging
3. Retrieving with main winch
4. Clearing
5. Tearing
6. Welding (cutting) operations
7. Lifting device
8. Dredging of a river exit (30%)
9. Underwater works
10. Towing
11. Underwater clearing

(Chart continued on next page)



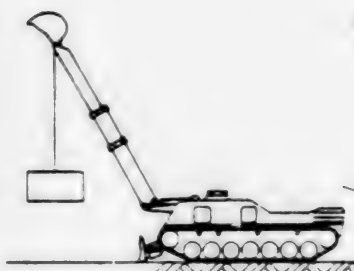
(4) Räumen



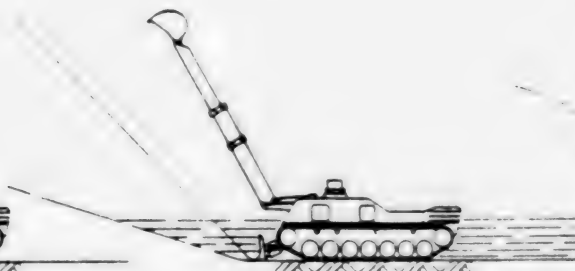
(5) Reißen



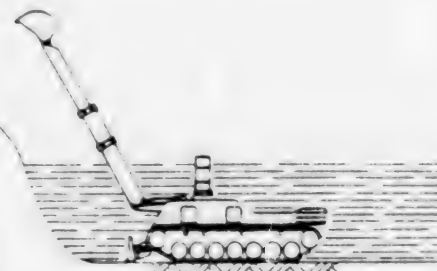
(6) Schweiß- (Schneid-) Einsatz



(7) Hebezeug-Einsatz



(8) Baggern einer Flußausfahrt (30 %)



(9) Unterwasser-Arbeiten



(10) Abschleppen



(11) Raumarbeit unter Wasser

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CSO: 3620/365



MILITARY

FEDERAL REPUBLIC OF GERMANY

# RIISING DEMANDS ON CONSCRIPTS, RESERVISTS DEMAND ATTENTION

Bonn DIE WELT in German 19 Jun 85 p 2

[Article by Ruediger Moniac: "Growing Demands by Bundeswehr [Federal Armed Forces] on Society--Comments on New White Paper"]

[Text] With its title "Freedom in Peace," the new white paper of the Federal Government sets the objectives concerning security policy and the Bundeswehr. The morality of government action can be reduced to such simple insights; developing the right policies from it all--for example, as far as the armed forces are concerned--is more complicated.

The question by which the new white paper will have to be gauged is whether in the coming years, marked by decreasing numbers of youths subject to military service and a more fiercely conducted debate about the right way of insuring peace, the Bundeswehr will be able to fulfill its tasks.

What with steady high unemployment and other liabilities incurred by government budgets in order to maintain a socially balanced climate, military defense quickly runs the risk of being curtailed both as far as personnel and as far as funds are concerned, particularly since there exist influential groupings and parties--from the Protestant Church to large parts of the labor unions to the Greens and the SPD--which think that it makes sense to weaken the Bundeswehr and influence public opinion accordingly.

For the question is: Why have a big defense budget and why have such a strong Bundeswehr, considering that for propagandist reasons the Eastern military power and its intentions are exaggerated by the West? Even though this message is wrong, it is believed by many in this country.

This is also sensed by the government, which uses noble words in its new white paper, stating: "The defense of the nation starts with conscious support for maintaining the liberal-democratic order. The Federal Government has made it an important objective of its policies to strengthen the awareness that national defense against outside threats is also the task of all responsible citizens, and not just that of the military.

To what extent this plan succeeds will have to be shown in an important area. It is a question of reducing the shortage of personnel in the coming

years resulting from the turn toward the pill in the 1960's. Because of it, the nation henceforth will make much greater demands on conscripts and reservists than in the past. They will be faced with basic military service extended to a year and a half and much more frequent military exercises.

This--an increased load for the individual--is but one side of the medal, however. The reverse side is the question of the loads which will have to be carried by society as a whole in behalf of the Bundeswehr--apart from the defense budget. More military exercises mean more frequent absence of workers for service in the reserves as far as the economy is concerned. Employers are expected to tolerate this. It is particularly hard for the middle classes and the crafts.

This, however, presupposes a rethinking in the Bundeswehr. It is scandalous how little interest is being shown sometimes among the forces in handling reservists. Many military exercises are organized with little thought, and a lot of time is being wasted. Many a person in the Bundeswehr has a hard time putting himself in the shoes of a reservist who knows how urgently he is needed in his job and notices how little attention the Federal Government pays to his time. Nor is there always appropriate gratitude and recognition for these soldiers' readiness for doing their bit. However, the new white book touches only marginally on the great task of the "use of reservists." This is an important shortcoming, for the time for familiarizing all forces of society with the new burdens needed to cover the personnel needs of the Bundeswehr and to enlist their support for them is wasting.

An advantage for the Bundeswehr may be the high unemployment, which in the search for qualified professional and long-term soldiers makes the value of those looking for work becomes smaller, competition between industry and the Bundeswehr increases.

The Bundeswehr must be able to make attractive offers to long-term and professional soldiers if it wants to hold its own vis-a-vis industry--and to entrust its expensive machinery and equipment to the better qualified among the age groups.

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CSO: 3620/456

MILITARY

FEDERAL REPUBLIC OF GERMANY

LUTWAFFE TRAINS FOR VERY LOW ALTITUDE FLIGHT IN LABRADOR

Bonn DIE WELT in German 23 Jul 85 p 3

[Article by C. Graf Brockdorff: "Stress Test 30 Meters Above the Expanses of Labrador"]

[Excerpts] Very low altitude flight is among the strengths of the NATO Air Forces, but one cannot train for it in the Federal Republic. So the Air Force makes a detour to Canada, where pilots encounter optimal conditions. There is also a stirring of local opponents of NATO, however.

This is the latitude to which the German Air Force has escaped to test something vital as far as its operational readiness is concerned (a test it can no longer conduct in Europe)--very low altitude flight at very high speed, that is flying 30 meters above ground at a speed of 0.91 Mach, or less than one-tenth below the sound barrier.

These days, crews of Fighter Bomber Squadron 35 from Pferdsfeld with their Phantom aircraft and pilots of the fighter bomber squadron from Oldenburg with their Alpha Jets are training in Goose Bay. In late July German Tornado aircraft of Noervenich Fighter Bomber Squadron 31 will show up for the first time at the remote airport of the other continent.

The pilots express their satisfaction with the realistic operational conditions being offered in Labrador. In a couple of areas, low-altitude flight down to 30 meters above ground and even lower is possible. In the Federal Republic, such a thing is not permitted anywhere; there the lowest altitude is 60 meters, and because of the short length of the route such flight is possible only for a minute to a minute and a half in each instance. Very low altitude flight, however, is the ace-in-the-hole of the numerically far inferior NATO Air Forces. It affords the West the opportunity to make deterrence credible, for the Soviets do not yet have a weapons system which could oppose such low-altitude flights. The pilots of the Warsaw Pact do not exercise at such altitudes.

A Phantom pilot major from Pferdsfeld reports:

"At an altitude of 30 meters and advancing at a speed of 16 kilometers a minute, the forward field of sight is reduced to a few centimeters. One

has to fly with the utmost concentration. It is no longer possible to cast a glance at the instruments; the man-in-the-rear in the cockpit does that. By the time we return, we are soaked with perspiration as a result of all the concentration."

The low-altitude-flight areas around Goose Bay cover 100,000 square kilometers. One can fly here unrestrained, frightening only lonely trappers and animals. A study of the Provincial Government of Labrador being conducted by independent zoologists is to determine the reaction of caribou herds to the low-altitude flights. The British Royal Air Force, which has been flying from Goose Bay for some time maintains cockily that since its presence the caribous have multiplied rapidly--what with the somewhat lethargic bulls being stimulated by the aircraft noise.

As far as NATO is concerned, very low altitude flight on unrestricted routes is an essential element for maintaining a credible deterrent. It is a practical example supporting the thesis that the prevention of war is the *raison d'etre* of the alliance, diametrically opposite to the picturing of war scenarios of this thesis. In this connection Goose Bay gains strategic importance. It cannot be to the liking of the Soviet Union that Goose Bay is turning into an El Dorado of NATO low-altitude flying. The Canadian Government has made an offer to the alliance to develop the base into a regular center for tactical flights. Public opinion in the West so far has virtually taken no notice of Goose Bay.

Others, who know what is going on there, are already in evidence. Canadian authorities are watching with interest as foreigners with downright unlimited financial resources mix among the Indians to arouse their opposition to turning Goose Bay into an airbase. Their slogans: For peace, against NATO, protection of man and beast from the noise of the jet fighter bombers.

With the help of this foreign support, which arrived from Europe when low-altitude flying started in earnest, Indians have already traveled to peace demonstrations and protests in the Federal Republic and put in an appearance at international congresses in Geneva. A representative of the German Greens also truned up at Goose Bay a few weeks ago to organize opposition against NATO. The Royal Canadian Mounted Police did not interfere. "This is a free country," said a Canadian officer.

In the coming year NATO will decide whether Goose Bay or Konya airport in Turkey is to be expanded into a new tactical weapons center of the Western air forces. The German pilots are sure that the Federal Air Force will stay on in Goose Bay. "Nowhere else can we fly under such ideal conditions," says one officer.

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CSO: 3620/456

MILITARY

FEDERAL REPUBLIC OF GERMANY

#### MULTIPLE PERFORMANCE SHORTCOMINGS OF TORNADO ALLEGED

Hamburg DER SPIEGEL in German 1 Jul 85 pp 34-41

[Unattributed Article: "If We Can Get Airborne, the Bird Will Fly/A SPIEGEL Report on Operation and Capability of the Tornado"]

[Text] Close to 40 officers crowd together this morning in the small conference room of the 2nd Squadron of the 31st Fighter-Bomber Wing. It is situated in a bunker camouflaged green-gray and closed with steel doors, located only a few kilometers from the Cologne-Aachen Autobahn near Noervenich.

At 0630 hours, Major Klaus Kropf, the squadron commander and with 700 flying hours one of the most experienced "Tornado" pilots in the air force [Luftwaffe] arrives. The gentlemen in the olive drab coveralls rise. "Good morning," says Kropf, and "miserable cold weather."

The meteorologist nods his head. That night, the 12th of February, his people measured -20°C [-4°F] near the ground. Yet the day promises to be nice, hardly any clouds, sunny, good to very good visibility. And in Terschelling? "Everything O.K.," says the meteorologist. It was clearing up. By noon the squadron could practice bombing on the range on the West Frisian island.

Gunnery, however, says the operations officer, could not be conducted. The Dutch fear ricochets because of the solidly frozen ground.

And finally the most important question of all: how many crews can fly?

The wing began its reequipment from Starfighters to Tornados in Oct 1983. It has 38 aircraft assigned, of which two are in repair. This leaves 36; of these, the technical group has made 12 operationally ready for the early shift. Some of the mechanics, as always in recent months, worked into the early morning hours. The last of the technicians did not leave for home until 0400 hours.



The commander of the technical group, Lt Col Gert Licht, with his 970 soldiers and civilians, also on this day performed a "small miracle": by late evening, half of his aircraft can take off; 18 of them can actually fly. "Sometimes I don't know myself how we do it," says Licht.

And 18 Tornados must remain on the ground.

Eleven years after its first flight, the expensive Tornado is still in the test stage--and only conditionally operational as a combat aircraft. The high-performance jet, once praised as the "greatest technological project since the birth of Christ" by Helmut Schmidt, is, to be sure, considered "number 1 in NATO" because of the navigational and targeting accuracy of its systems, but significant performance indicators, which are needed to make the aircraft a qualified weapon, continue to be lacking.

Prior to its "full serviceability," according to the latest classified report for the defense committee, tests of the "armament, the combat avionics and the ground equipment" would be required. "The aircraft in-commission rate was...not yet satisfactory."

One hour of flying currently requires 60 to 70 hours of maintenance. The manufacturer had promised that 33 would suffice. The susceptibility to interference of the swing-wing aircraft, equipped with highly delicate electronics, is much higher than expected.

Of the four Tornados which are to take off toward 0800 hours for the first training flight to Terschelling, one must abort its takeoff while on the taxiway: a red warning light goes on in the cockpit. A problem indicator or--as so often--a false alarm? The mechanics search for a long time.

In one of the three aircraft that took off, the electronics of the automatic weapons release equipment go haywire while approaching the target on Terschelling. The pilot, with many years of Starfighter experience, must drop his bombs on the target manually, as in days of yore. The other two pilots report no problems after their return. Their jets, after a short check in the protective bunker, can taxi for takeoff with new crews.

"That too is possible," says Lt Col Walter Jertz, who commands the flying group. "If we can get airborne, the bird usually flies with no problems." If. Three years after becoming operational, the Tornado is only semi-serviceable; many aircraft are grounded, wait for months for parts, or are cannibalized [to get parts] for other jets. In the air, the highly complex aircraft has by no means been tested under all required conditions; the promises of the manufacturers have not yet been kept.

And in an emergency, the expensive Tornado, assuming it flew, would not have the right ammunition: the system is ailing. The military representatives in Bonn did their job only halfway when they hoped to be able to outdo American competitors with a European development of their own.

Three years after the reequipment program began, the Tornado has not yet been flown in the flying units under severe combat conditions; it is more an aircraft for show purposes.

The German armament firm Messerschmitt-Boelkow-Blohm (MBB), one of the main producers of the German-British-Italian aircraft, does, to be sure, advertise in military-technical publications with a "Tornado checklist," in which all vital points are checked off, including "low-level flight testing, operational altitudes." However, naval and air force pilots may only in exceptional cases and in good visibility go down to 75 meters.

Also in an emergency [wartime]?

At such times the Tornado is to whisk across the ground at a speed of more than 1000 km/h and an altitude of only 60 meters at any time of day or night and under all visibility conditions, so as not to show up on the enemy's radarscopes. For this purpose, the aircraft has an elaborate very low altitude flight control system.

A special radar senses the profile of the terrain and feeds the data to a central computer, which in real time transforms the data into control signals and relays them to the autopilot. The pilot monitors the instruments, the weapons system officer in the rear seat programs the targets for the 8 tons of bombs and missiles.

"The Crash Rate is Consistent with the NATO Standard"

The approach to the target then takes place automatically. In zero visibility, pilot and weapons system officer must blindly trust the instruments and computers.

The pilots at Noervenich have already practiced this several times in the simulator, but never in actual operations. This summer, finally, the first fully automatic extreme low-level flights are to be carried out in Goose Bay, Canada, over largely uninhabited territories. For reasons of noise disturbance alone, such flights are not allowed over German territory.

The test pilots of the manufacturing firms, who thus far have carried out 98 very low level flights under extreme conditions, express themselves reservedly [cautiously] in their final report: the stress on the crews was extraordinarily high; for this reason they must possess a "comprehensive familiarity with the system" and must be prepared for their task by a "graduated training program."

Afraid of what the next few months will bring?

Jertz and Kropf say they would plunge into the new adventure "on the spot." They know the aircraft and have seen, even if only under optimal conditions, that "computers react more precisely than human beings." Over hilly terrain the computer-guided Tornado is still flying at high speed toward a hill when the pilot would long since have pulled the aircraft up with his joystick. Kropf: "A depressing experience at first."

The first crash of a crew from Noervenich in the summer of last year came as a shock to the pilots, but strangely enough it did not cloud their confidence in the jet.

On 6 July, two Tornados of the 31st Fighter-Bomber Wing had flown past the 1000 kW "Radio Free Europe" transmitter station at Kolzkirchen near Munich at a speed of 800 km/h and an altitude of 200 meters. The aircraft's electrical guidance system failed; the Tornado crashed vertically into the ground and exploded.

Probable cause of the crash (see SPIEGEL 30/1984): an electromagnetic shock. The crew of the second aircraft noticed nothing of all this.

The flight safety inspector is still puzzled, his interim investigative report is classified. Since this accident, however, radio transmitters must be flown past at a large distance.

The air force and the navy have thus far lost four of the 322 aircraft ordered, one of them crashed during testing already. The British have reported seven total losses, the Italians one.

"This is a loss rate that is in keeping with the NATO standard," according to Brig Gen Hugbert Ibel, the authorized Tornado system representative on the Hardthoehe [location of the FRG defense ministry] in Bonn. Ten crashes in 100,000 flying hours are considered normal in the alliance.

Only the F-15, for many years a problem child of the U.S. Air Force, flies better. With a loss rate of 4.3 per 100,000 flying hours, it is currently the safest combat aircraft of the Western world.

The F-15 also holds another record: last year an average of 80 per 100 aircraft were operational. Pilots and technicians of the Tornado can only dream of an achievement such as this. The so-called incommission rate, the serviceability rate, in other words, is improving, to be sure, as the statistics of the defense ministry show, but is still only 50 to 55 percent. What this means, in so many words, is that of the 160 aircraft delivered to date a maximum of 90 are operational on any one day. The rest are in repair.

Every fifth aircraft is standing around inside a hangar, cannibalized. Vital parts are removed from a grounded aircraft and in an involved procedure installed into others, in order at least to be able to carry out minimum flight and training operations in the wings.

The air force's designation of this type of spare parts procurement: "controlled removal [dismantling]."

In a few years, so promises Brig Gen Ibel, all this will surely change. Waiting periods in the procurement of spare parts for new aircraft were "normal and not unexpected." For reasons of economy, bottlenecks were knowingly accepted, since after all no super-large spare parts depots could be maintained. So says the general, who does not notice that he really should make up his mind--does he want bottlenecks? economy? or functional aircraft?

The officers in the wings want to, and must, fulfill their NATO norms (180 hours of flying time per year). In the publication "Wehrtechnik" [Military Technology], Col Lorenz Huber of the air force's materiel office accuses the industry of having promised too much when introducing the Tornado. "Conspicuous is the discrepancy between the functional and failure pattern predicted by industry and the actual failure pattern in the severe operational environment of the line units."

Lt Col Hubert Plitek expressed himself more clearly in "Soldat und Praxis" [Soldier and Practical Knowledge]. The number of technical problems was two to three times higher than expected, the automatic test system (ATS) did not function, the amount of work per hour of flying was twice as high as planned. "This situation" confronted the troops "with manifold problems."

The deficient spare parts supply system is at the top of the complaints list for Col Joerg Boettcher, the commodore of the wing at Noervenich. A Starfighter wing got by with 12,000 various spare and replacement parts. A Tornado wing must have 45,000 of the 120,000 spare parts in stock at all times. Only a fraction of these are on hand. Programs for special test equipment and special tools are lacking. The spare parts listings are incomplete, even though more than 400 volumes in size.

"We are still in the learning stage," says Boettcher, "we will work it out." Boettcher is the perfect example of a pilot optimist.

The muscular man with bushy mustache, a farmer's son from East Prussia, crashed with a Starfighter in 1978 near Idar-Oberstein, following an engine failure. He ejected from the aircraft at the last possible moment, broke two lumbar vertebrae and after several weeks in the hospital immediately climbed back into the cockpit. Since then he has carried a certificate from the ejection seat manufacturer Martin-Baker in his breast pocket, to the effect that he was the 2886th pilot to survive ejection with this rescue gear.

"The likelihood that I will go down again is small," Boettcher says.  
"The bird is a good one, it has two engines, after all."

Boettcher and his technicians solve the spare parts problems in their fashion. The type escort officers trained by the aircraft industry and the MBB representative in the unit make use of their direct contacts to the manufacturers; the low-level duty channel is apparently faster than the high-level one.

A Dornier 28 aircraft picks up the required parts directly from the industrial source in exchange for a receipt. Because of the cumbersome bureaucracy with its many forms for depots, materiel office, NATO, the Federal office for military technology and procurement, the procedure would otherwise take days, weeks or months. Often it is only a small part that is needed: a gasket, screw or cable--or entire replacement modules for the electronic system and the engine.

The difficulties were predictable. The Federal Audit Office served warning in 1978 already against balancing the enormous cost increases for modern weapons systems by reducing the spare parts reserves--just to stay within the limits of the costs approved by parliament.

After the bad experiences with procurement for the "Phantom" reconnaissance and fighter aircraft, the Federal auditors called on the military to be more honest. A basic allowance of spare parts, assessed at only 30 percent of the actual per aircraft cost, was "inadequate." Such a course of action would of necessity lead to "logistic difficulties" in the wings.

Neither politicians nor air force generals heeded the warnings. When the costs of the Tornado, which in 1970 was still to cost between DM 10 and 20 million, rose astronomically, the basic allowance of spare parts was even reduced once more.

The per unit price for the stripped Tornado rose from DM 26.4 million in 1975 to more than DM 43 million at the end of last year, and the so-called system surcharge rose from DM 16.1 to DM 30 million. This includes spare parts, test and training equipment, manuals, consultation, technical changes, and retraining of pilots and technicians. Added to this are taxes, import duties, and above all the always separately listed charges for design, development and service. The total price per aircraft: more than DM 105 million.

The annual price increase, which in the late 1970's was for a while around 10 percent, and which in 1981 brought Woerner's predecessor Hans Apel (SPD) into a tailspin, has been lowered to 4 to 5 percent.

Despite the difficulties in the wings, the funds for spare parts were not increased. The military, to preserve a good appearance and let the most expensive weapons system of the Bundeswehr appear to be less



costly, carried the cost of spare parts under the heading of materiel maintenance costs--a procedure which the Federal Audit Office had likewise criticized years ago.

The upkeep costs increase from year to year, and for the Tornado they are now in excess of DM 2 million. The operating costs for all Starfighters, Phantoms, Transalls, and Tornados presently comprise nearly DM 1.5 billion in the air force budget. Added to this are DM 500 million for fuel.

The representatives of the budget and defense committee, who in the late 1970's had often argued about the point and purpose of the cost explosion, have meanwhile resigned themselves to the evolution [trend]. The bird flies, at least--more or less--it can be demonstrated.

More worried are the new Bundeswehr chief of staff Wolfgang Altenburg and the air force commander Eberhard Eimler, whose responsibility it is, finally, to make the aircraft operational. They inherited expensive and high-performance equipment from their predecessors, but no munitions. The Tornados must fly with obsolete bombs and missiles, which were used with the Starfighter and Phantom already and which in part date back to the 1960's.

For "effective operations" of the air force, according to the 1985 Bundeswehr plan, the air force continues to lack effective munitions. "Marked improvements" could not be expected before the early 1990's.

For this reason, electronic jammers and so-called stand-off weapons are to be developed, at a cost of millions, in the next few years. Anti-radiation missiles are to make detection by the enemy more difficult. Guided missiles are to exist then which are launched far from the target and which are to hit aircraft and tanks, bridges and bunkers of the enemy with pinpoint accuracy.

The modern munitions type currently existing for the Tornado is primarily the multipurpose weapon MW-1, called the "poor man's atomic weapon" in NATO. But this has long since ceased to be the last word of the armament industry, even though the wing at Noervenich has just received its first ones.

The MW-1, produced by a subsidiary of the Bavarian armament concern MBB, is a container with highly explosive content: up to 4000 tiny explosive devices, so-called bomblets, which destroy runways and shelters or which are to halt the advance of tanks with rod and hollow-charge mines.

The drawback of the miracle weapon on the miracle bird: the target must be directly overflown--the expensive weapons carrier is subjected to enemy air defense fire. The air force must figure on such high losses that the Tornado inventory would be reduced by 50 percent already after a few days (once again).

"The overflying of targets," thus Altenburg in the military command council, "is becoming riskier from day to day. By the time the Tornado finally has modern armament with fire-and-forget missiles, it will probably be 15 years old."

For this reason, the air force does not plan to use its 100 million DM baby in support of ground forces on the battlefield, as originally planned, but rather to destroy the enemy's air force while it is still on the ground at the air bases immediately after the outbreak of hostilities. The controversial FOFA (Follow-On-Forces-Attack) plan of the American NATO supreme commander Bernard Rogers would thus be anticipated.

Rogers already wants to stop the approach of the second echelon of the Warsaw Pact states in the event of war with targeted attacks in the rear area--a plan which of necessity would trigger preventive strikes by the Soviets.

The Tornado would have to assist, the Bundeswehr chief of staff demands in his paper, in effectively slowing the fronts of the second Soviet echelon "in their advance through the destruction of bridges across the Vistula, Oder, Moldava and Elbe rivers." Currently, however, the "shortage of operationally decisive munitions types...clearly limits the combat staying power of the army and the effectiveness of the modern weapons carriers of the air force."

The consequences of these new tactics are predictable. The air force needs not only a new fighter aircraft to oppose Soviet MiG's and new munitions for its Tornados. In addition, it needs a new reconnaissance aircraft.

MBB has already offered a new Tornado version having the abbreviated ECR (Electronic Combat and Reconnaissance). These aircraft, like scouts, are to fly ahead, deceive radar sites and relay the acquired target data to the bombers coming up behind them.

The air force has meanwhile completed its "tactical requirement;" immediately after delivery of the last Tornado bombers, the construction of 40 Tornado reconnaissance aircraft is to begin. These aircraft are needed, it is claimed, to "improve perceptibly" the effectiveness of the fighter-bombers. In addition, the reconnaissance aircraft will represent "the bridge" to the fighter aircraft 90, which is to enter series production in the early 1990's.

Ministers and firms in the FRG, France, England, Italy and Spain are still engaged at arguing about what the EFA (European Fighter Aircraft) is to look like and who is to receive the biggest contracts. By 15 July, so the ministers just agreed in London, the participating firms are to try to come up with a jointly worked out concept [of the aircraft] on the drawing board. Air force chief of staff Eimler last week said: "One way or the other, the decision must be made this summer. We need a new fighter aircraft."

If the parliament goes along, the German armament industry can thus continue to count on billion DM contracts and million DM profits in the decades ahead. MBB makes it all happen. Otherwise--if new orders were not received soon--mass releases of workers in the German armament industry would take place at the end of the 1980's already.

This line of argument makes approval by the representatives a foregone conclusion already now. The pilots are bound, at some time or other, to make something of their expensive weapons.

Box on p 36:

...and Foam Rubber Strips of it Rains/Excerpts from Experience Reports of Pilots of the 1st Naval Air Wing

Serviceability: 8000 flying hours per year were required, 6550 were attained. Of the 46 Tornados, an average of 15 to 20 are flyable per day. Of these approximately half are deadlined immediately before takeoff because of acute technical problems. The nonetheless high number of flying hours is attained because the crews are ordered to transit the republic at (tactically pointless, but materiel-conserving) slow speeds--300 to 350 knots--555 to 648 km/h: "Germany in a 2-hour cadence" (pilot slang).

Flight Simulator: The simulators are defective as often as the aircraft; in addition, they are years behind the technical advancements continually being made to the Tornados. A unit was procured for over DM 100 million for the naval pilots in Jagel which, instead of the actual operating area of the crews (GDR coastline, Baltic Sea, Denmark), shows a landscape in the United States; realistic exercises are impossible.

Armament: The naval pilots at Jagel have hardly any problems with the "Cormoran" air-to-surface missile [ASM]. The fighter-bomber wings at Jever, Lechfeld, and Noervenich are lugging antiquated 1000 and 500 pound bombs, which in wartime would have to be dropped exactly over the target; according to an internal study, the pilot's chance of survival thereby would be less than 10 percent. Even though the Tornado was actually designed neither for aerial combat nor for attacking pinpoint targets, so that it would at most use its cannons for its own defense when airborne, it was equipped with two cannons. Practice ammunition is so expensive that firing is to be done with one cannon only; the weapons computer is designed to work for both cannons, however--some shots are misdirected.

Navigation: Already 6 months before the crash of a Tornado near Holzkirchen in Upper Bavaria--close to the transmitter station of "Radio Free Europe"--a Tornado crew had reported that while flying over the transmitter parts of the automatic steering and the navigational system had failed and music could be heard in the

headsets. Since this crash, presumably caused by electromagnetic influences, aircraft of the fighter-bomber wing at Lechfeld may use the runway in one direction only--the emissions of the U.S. transmitter at Garching are considered too strong. Since then Lechfeld airfield has been useable only within certain limits; if the wind is coming from the wrong direction, takeoffs and landings are impossible. Likewise the utilization of the HF transmitter--for radio traffic with a ground station over very large distances--led to steering deflections. Occasionally the crash recorder was jettisoned or the entire navigational system disabled. Result: The transmitter has been disconnected in all aircraft (since 3 years ago).

Weatherworthiness: the seal and cockpit canopy, the turbines have to be running. Tornados whose turbines are not running must therefore be parked under cover. When flying to airfields of other NATO partners where no hangar space is available, the crews take along large rolls of foam rubber sealing strips: with these the cockpit canopy is sealed from the outside, so that the rain will not enter.

12689

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MILITARY

LUXEMBOURG

#### USSR SUSPECTED OF SHIPPING WAR MATERIAL VIA LUXEMBOURG

Luxembourg LUXEMBURGER WORT in German 2 Jul 85 p 3

[Article: "Soviet Internationalism. Supplies For Soviet Troops In Kabul Sent Via Luxembourg? Aeroflot Makes Many Freight Flights From Luxembourg To Unknown Destinations."]

[Text] The discussion is still in full swing about the case of smuggled technology uncovered by our newspaper--it is known that the USSR's state airline wanted to bring valuable U.S. technological material behind the Iron Curtain from Luxembourg, by-passing licensing requirements (see LUXEMBURGER WORT of 28 and 29 June 1985). Now, we have been able to find out about another Aeroflot maneuver. This time it is again a matter of obscure freight flights by the Soviet civilian airline company which, however, also undertakes military tasks and so serves the Soviet policy of expansion.

On 6 June 1975, then State and Foreign Minister Gaston Thorn and the present Soviet Foreign Minister Andrei Gromyko signed a bilateral air travel agreement in Moscow. In an act of 15 May 1976, the Chamber of Deputies ratified this agreement, which was negotiated by the likewise liberal Transport Minister Marcel Mart and which up till now has been mainly to the advantage of the Soviet Union. According to the agreement. Aeroflot is entitled to one flight a week, but they have usually applied for two of them or sometimes even more. While this increase in capacity might at first glance seem a favorable sign for Findel's [Luxembourg's international airport--tr.] development, this simply isn't so when one looks at the background of the various flights.

Officially, the Aeroflot officials almost always give Moscow as the destination, but many times there are stopovers, "for technical reasons," in Prague, Berlin-Schoenefeld (GDR) or airports in other satellite countries. Because of this, Luxembourg supervisory authorities ultimately do not know where the freight taken on board at Findel in reality goes.

Take Afghanistan, for example. On 27 December 1979, the Soviet army marched into this neighboring country, which had been independent since the end of the twenties, to support--against the will of the Afghan people--a tyranny of communistic stamp. Since then, the Soviet invasion troops, superior by far in



numbers and material, have proven themselves responsible for a bloody war in the former Near Eastern kingdom. Despite a gigantic war machine directed from Moscow, the pitiless aggressors have for long been unable to meet with any success against the liberation fighters who are defending themselves heroically all across the country. Throughout the entire free world, people's sympathies are with the heroic national resistance in Afghanistan. So, does the freedom loving country of Luxembourg really have to be drawn into this dirty war of aggression by the communist expansionists in Moscow?

What is it all about? On the basis of extensive investigations, we were able to find out that Aeroflot has been transporting freight from Luxembourg to occupied Afghanistan. According to our information, this is usually material declared as "textiles" flown by Cargolux from the Gulf States to Luxembourg, where it is then accepted by Aeroflot for further transport. To the extent that it is in fact a matter of textiles, these come from some country or another in the Middle or Far East, against whom the Soviets otherwise don't hesitate to level propaganda attacks. But who knows what really is in the bales and crates which are transferred at Findel? For this is a matter of goods in transit that cannot be examined by Luxembourg customs. Thus, the Soviet strategists have found a way to exploit the liberal practices accepted and adhered to in the free part of the world to cover their tracks and so arrive at their goal!

12507

CSO: 3620/425

MILITARY

NORWAY

# CONSERVATIVE'S CHIEF WARNS AGAINST SOVIET DOMINANCE IN SEA

Oslo AFTENPOSTEN in Norwegian 12 Aug 85 p 5

[Text] "We must at all costs prevent confirmation of the impression that the Norwegian Sea is dominated by Soviet naval activities," stressed Conservative chairman Erling Norvik in Karasjok yesterday. "A few weeks ago the Soviet Union demonstrated its superior naval power in our immediate vicinity--in a way that should lead to a good deal of reflection in Norway," he stated.

In his speech to the summer meeting of Finnmark Conservatives Norvik also said that whether the Soviet operation was defensive or offensive in nature makes no difference to the fact that Norway is being placed in a very difficult defense situation.

The naval exercise involved a hundred large naval ships from the two fleets in the Barents Sea and the Baltic. The ships demonstrated a convincing ability to cut off ocean connections between Norway and our allies in a crisis.

## Clear Reminder

"The exercise was a clear reminder of the importance of continuing our co-operation with regard to the stockpiling of materiel for allied forces in Norway. That is the only realistic possibility of getting allied troops to come to our aid if sea lanes are totally or partially blocked.

"The exercise also underlined the need to hold regular joint exercises in Norway with our allies and the importance of having Norwegian ports and waters open to visits from and cooperation with allied naval forces," said Norvik.

"Our most important allies in this context are the United States and Great Britain whose naval forces have the capacity and ability to operate in these ocean areas. We should welcome such operations in peacetime in order to underline the international status of these ocean areas."

## U.S. Guarantee

The Conservative chairman continued: "Norwegian politicians who regard it as a virtue to be quick to criticize the United States should clearly recognize the serious consequences it could have for Norwegian security if the ties and good relations with our American friends are weakened. The United States is our most important support as well as NATO's and in reality it is the only nation that can guarantee our security completely--in the exposed situation we find ourselves in.

## Supporting NATO

"Therefore it is important for us to stress that Norway's membership in NATO helps to safeguard our security, independence and peace in freedom. For this reason it is imperative to avoid misunderstandings and uncertainty about our affiliation with the alliance. This is why there is every reason to emphasize once more that in the West only NATO is capable of balancing Soviet military superiority in our part of the world. Only NATO can meet the Warsaw Pact lands with the necessary forcefulness and achieve mutual and balanced arms reductions in East and West. Therefore the Conservatives are determined to support Norwegian membership in NATO," Norvik said.

6578

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MILITARY

NORWAY

## AIR FORCE, AIR LINES MOVE TOWARD DEALING WITH PILOT DRAIN

### SAS, Military Share Training

Oslo AFTENPOSTEN in Norwegian 12 Jul 85 p 18

[Article by Alf Seeland]

[Text] For a 3-year period beginning immediately, SAS will share with the air force any pilots who go over to SAS. At the same time, an economic bonus system will be established in individual agreements with pilots who sign long-term contracts with the air force.

In the longer term, the Scandinavian countries will establish a Nordic airline pilot training school. The Defense Ministry and the air force hope that this will solve the near-crisis that has arisen since SAS has attracted military pilots for a number of years.

AFTENPOSTEN learned that these are the main points in the resolution that is expected to be passed in a cabinet meeting this morning and which the Defense Ministry has worked hard on for a long period of time. It would be an exaggeration to say that there is any agreement with SAS on sharing pilots with the air force during a transition period of 3 years. The authorities have put sufficient pressure on the SAS ownership, however, so that the Scandinavian company has had to accept the decision that will be made this morning. From now on, any military pilot who signs a contract with SAS after ending his military obligation will serve both SAS and the air force for periods of up to 6 months. Studies show that some of the pilots the air force lost this year might consider this sharing arrangement on a voluntary basis.

Defense Ministry and air force leaders are now breathing a sigh of relief, since the situation with our F-16 squadrons was coming dangerously close to the minimum standards set by NATO. This new measure is expected to have an immediate positive effect.

The economic package the government is expected to approve today is designed

to give individual military pilots an attractive bonus for remaining in the air force a certain number of years after their tour of duty. AFTENPOSTEN learned that these bonuses could total 1.2 million kroner under most favorable tax conditions. At the same time, after a tug of war with the Finance Ministry and the Administration Ministry, there will be an upward adjustment of the so-called B wage scale that could almost triple pilot bonuses in the air force.

A group of officials from the three Scandinavian countries has been working for over 6 months on a plan to establish a Nordic airline pilot training school in order to take some pressure off the military. Sweden has had such a school for a long time and current plans are to utilize this school, so that students from Denmark and Norway could receive some of their training in Sweden. At the same time, airline pilot training schools also would be established in the two NATO countries, according to the Swedish pattern. This could occur by 1989 at the earliest.

Now that the acute problem of the air force seems to be solved, high-ranking officials are now considering the long-term leadership problems at our air bases. Consideration for our allies also requires us to have highly qualified people pursuing a career in the air force and motivated experts who want to be there instead of people who dream about airline pilot's stripes and sky-high wages after their military obligation is over. There is no doubt that in the Scandinavian countries, it is SAS that is most attractive--and the biggest problem for the military.

#### Air Force Optimistic

Oslo AFTENPOSTEN in Norwegian 13 July 85 p 9

[Article by Liv Hegna]

[Text] Air force pilots employed by SAS after they have completed their military obligation must now share their time between SAS and the air force for 3 years. This arrangement, according to which pilots must serve 6 months in the air force until the end of 1988, was worked out by the supreme command of the air force and SAS and was approved by the cabinet on Friday. At the same time, a bonus system was established for pilots entering into long-term contracts of 15 years.

The Defense Ministry believes that this arrangement will solve the pilot crisis in the air force. For many years SAS has drained pilots from the air force.

It is a positive development that the political leadership has taken nontraditional steps to solve the pilot crisis, according to secretary



general Ola Finsdal of the Air Force Officers Association. As early as Monday he will contact the Defense Ministry to demand market-oriented wages for other categories, such as the technical personnel at some radar stations. Finsdal realizes that there will be negative reactions from army and navy officers over the new wages for pilots.

A squadron chief in the air force with the rank of major is paid according to government pay scale 25. With an annual salary of 169,725 kroner, a basic supplement of 39,193 kroner (B scale) and a pilot's bonus of 11,905 kroner, he earns about 220,000 kroner. With the bonuses contained in the package now proposed by the Defense Ministry, this figure would increase to about 240 thousand kroner. That is about 100,000 kroner more than beginning wages at the civil airline Wideroe Flyveselskap

AFTENPOSTEN was unable to determine how much he would earn at SAS after the initial probation period. It seems clear, however, that his career earnings would be considerably higher at SAS than in the air force, however, since top wages at the civil airline are over 480,000 kroner. By way of comparison, top wages at Wideroe are now about 345,000 kroner.

The pilot director at SAS Norge, Jan Henrik Andersen, said that SAS competes successfully for air force pilots because the company can offer jobs in advanced aircraft in traffic to interesting airports.

"In addition, our pilots can build a house at a certain location and know that he and his family can continue living there. In interviews with potential pilots, wages are in fourth place on the list of factors being considered. Another important factor is that they can continue flying until they are 60 years old with us, while in the air force they must stop flying when they are about 40," Andersen said.

The inspector general of the air force, Maj Gen Magne Tobias Sorensen, said that the air force would now do a better job explaining to young pilots what interesting jobs await them in staff positions after their career as a pilot ends.

AFTENPOSTEN learned that SAS was surprised to find out that it was the only company subject to the new restrictions on the hiring of military pilots. Why do the regulations not apply to Braathens SAFE, which also avails itself of air force personnel, although on a smaller scale, the asked.

Defense Minister Lauds Plan

Oslo AFTENPOSTEN in Norwegian 13 Jul 85 p 9

[Article by Alf B. Godager]

[Text] "I am quite pleased with the new understanding we have reached with SAS and with the economic package that has been presented in the cabinet," Defense Minister Anders C. Sjaastad told AFTENPOSTEN. The minister added that he thought the air force's need for pilots would be met over the next few years because of the bonuses that will now be offered to pilots.

As indicated in the morning papers on Friday, beginning immediately, SAS must share with the air force any pilots who leave the air force and begin working for SAS during the next 3 years. "This means that we will be assured a sufficient number of experienced fighter pilots," Sjaastad added.

He believes that the economic package approved by the cabinet yesterday will increase the number of fighter pilots. In this connection, he pointed to his contacts with pilots who had given a positive response.

Are there signals from personnel organizations indicating that there will be demands for special treatment of other job categories, as well?

"We must always expect that there will be more or less justified demands, but in this case we found ourselves in such a situation that special measures were required."

What will it cost the air force?

We expect that it will cost 10 to 20 million kroner each year during the initial phase, after which the figure will stabilize at about 10 million kroner. In addition, there are bonuses that will be paid only after 15 years. There will be 50 to 80 contracts of this type over these 15 years. The extra expenditures are not so high when you consider that 10 million kroner has been invested in every pilot who leaves the air force.

Domestic Airlines Back School

Oslo AFTENPOSTEN in Norwegian 16 Jul 85 p 36

[Article by Liv Hegna]

[Text] Both Wideroes Flyveselskap and Braathens SAFE have expressed support for the government's proposal to establish a civil pilot training school as the best long-range guarantee against future pilot crises in the air

force. "We could conceivably offer to cooperate with the authorities by permitting out Twin Otter simulator to be used in the training of civil pilots," director Knut Roed of Wideroes Flyveselskap told AFTENPOSTEN.

Roed pointed out that Wideroes Flyveselskap has 170 pilots, all of whom received civil training. "Cooperation between the civil pilot training authorities and the airlines could make the civil training rational and economic. In addition, students would know that they could receive top-quality training by beginning at the civil pilot training school," he said.

Thore Martin Morstad, head of pilots at Braathens SAFE, told AFTENPOSTEN that his personal opinion was that the company could help provide expert pilot training in Norway. "We have our simulator for the Boeing 737 at Fornebu. Some of our best customers are Pan Am pilots. It should be pointed out that this simulator could be an important factor in the training of civil pilots. Through cooperation between the airlines and the authorities in the area of civil pilot training, the companies could be assured that the quality of these pilots would be just as high as that of pilots now recruited from the air force," Morstad said.

Braathens SAFE does not take as many air force pilots as SAS. This could be one reason why the government has decided that the new restrictions, whereby pilots leaving the air force would be required to serve 6 months in the military during the next 3 years, would apply only to SAS. The smaller companies are somewhat concerned that the restrictions may be applied to them in the future. In reality, civil companies must employ two pilots instead of one when they are guaranteed the services of a pilot for only 6 months out of each of the first 3 years of employment. In addition, there are costs involved in training the pilot for the actual type of plane he will use when he returns to the airline. AFTENPOSTEN learned that the airlines' extremely positive attitude toward a civil pilot training school results from the fact that the airlines will be able to employ pilots in their early twenties. At present, the airlines must wait until pilots are over 30 and have completed their obligation with the air force.

Braathens SAFE recently hired three new pilots. This is the number most often hired by the company. Morstad told AFTENPOSTEN that, beginning in the early 1990's, the company will begin to hire a slightly larger number. It is impossible to state an exact number today, however, he said.

### Airline Wants Guaranty

Oslo AFTENPOSTEN in Norwegian 17 Jul 85 p 32

[Article by Liv Hegna]

[Text] "If it turns out that air force pilots use Braathens SAFE in the future simply as a 'stopover' between the air force and SAS in order to avoid 6 months of service each of the first 3 years, then we will demand a guaranty that we will be compensated for our expenses," the chief of pilots at Braathens, Thore Martin Morstad, told AFTENPOSTEN.

The company is considering demanding compensation for expenses involved in converting the pilots' certificates from military to civil aviation. The same applies to expenses incurred by the company in training the pilots for the type of aircraft used by Braathens SAFE.

Morstad pointed out that there always have been some pilots in his company who have chosen to go over to SAS after a time. He stated, however, that regulations concerning pension rights and the fact that new pilots are not given seniority with regard to wages when they change companies have prevented many pilots from going from one company to another.

"But we could possibly demand that new pilots sign a paper indicating that they will repay 200,000 kroner if they leave us within 3 years," Morstad said. He said that air force pilots now hired by Braathens SAFE say they want to work for that company and spend the rest of their career there and not be tempted to transfer to SAS. "The fact is that Braathens' pilots eventually earn almost as a pilot at SAS. Our beginning wage is almost 200,000 kroner. Not many people believe that is a low beginning wage," Thore Martin Morstad said. Although he admitted that this was lower than pilot wages in the air force, he said that raises were more frequent with the airlines than in the military.

Jan Henrik Andersen, who is in charge of pilots at SAS, told AFTENPOSTEN that his company had already hired four pilots from Braathens SAFE this summer. "SAS will not send out a recommendation to air force fighter pilots that they take jobs at Braathens SAFE before coming to us, in order to avoid the 'extended duty' of 6 months each year over the next 3 years. SAS will continue to evaluate each individual pilot seeking a job with this company, regardless of where he comes from. I believe it would be regrettable, however, if the same thing happens here in Norway that has happened in Sweden. The authorities there have set a ceiling on the number of pilots SAS can take from the military. As a result, several military pilots have taken jobs with large foreign airlines," Andersen said. He indicated that one of these companies was SWISSAIR.

## Women?

Jan Henrik Andersen also said that SAS had held a thorough discussion 2 years ago on accepting women pilots, based on experience gained from the employment of the only woman the company had hired during its entire history. "We came to the conclusion that there are no convincing arguments against accepting women. In a modern society it is impossible to let maternity leave, for example, keep women from pursuing a career as a pilot. SAS is willing to accept the additional cost. SAS has employed one woman in Sweden, but there were no female applicants this year in Norway," Jan Henrik Andersen told AFTENPOSTEN.

9336

CSO: 3639/137



MILITARY

SWEDEN

## DELAY IN COMPONENT DELIVERIES FROM U.S. SETS BACK GRIPEN

Stockholm SVENSKA DAGBLADET in Swedish 30 Jun 85 p 6

[Article by Erik Liden]

[Text] There will be no test flying of the JAS-39 Gripen early in 1987. U.S. deliveries for the new electrical control system are far behind schedule, and in some cases there is defective quality.

This is revealed in the project evaluation report sent to the OB [Supreme Commander of the Armed Forces] and the government by the FMV (Defense Materiel Administration). During the course of the project and continuing until series production begins in 1992, seven project evaluations are to be made--one every 18 months. This is the second such report.

### Crucial

The new electrical control system is crucial to the operation of the Gripen. If it does not function perfectly in the three different systems guaranteeing flight safety, the aircraft will not be able to take off from Saab's airfield in Linkoping in 1987.

Even before the political decisions concerning the JAS-39 Gripen were reached in 1982 and 1983, aviation experts at the Stockholm Institute of Technology and elsewhere were questioning the electrical control system that is to replace the current mechanical system with its steel cables and levers.

Testing of a simpler electrical control system in the Viggen gave good results, but the mechanical system was in place throughout the testing as a backup.

The reason for the trouble with the U.S. deliveries is that the order is relatively small and that Sweden does not take priority in competition with the U.S. aviation industry.

According to the FMV, it is impossible to say at present when the first test plane will be ready for trials. The functioning of the control system will be the crucial factor. In its report, the FMV strongly stresses that point to the aviation industry. The delays have increased in 1984 and 1985, but the

JAS industrial group still expects the start of series production to be possible as planned in 1992. So far, the other subprojects are going well.

#### Too Heavy by 100 Kilograms

Tests carried out in wind tunnels, with computers, and in other ways show that the Gripen is currently just over 100 kilograms too heavy to perform as promised. To maintain engine power and for other reasons, the weight will have to be reduced at the design stage.

At constant prices with the new dollar index, the JAS-39 is now going to cost 38 billion kronor through the end of the century. That amount is equivalent to the 24.9 billion kronor that were earmarked in 1981 in preparation for the political decisions.

#### May Become More Expensive

But the studies now underway in the Swedish missile industry to determine the possibility of reducing imports of weaponry for the JAS-39 Gripen and other equipment may make the project more expensive. The cost of developing missiles or missile components in Sweden will be considerably higher than that in the United States, for example.

11798

CSO: 3650/283

MILITARY

SWEDEN

GOVERNMENT CRITICIZED FOR WITHHOLDING REPORT ON USSR PLANE

Stockholm DAGENS NYHETER in Swedish 12 Jul 85 p 2

[Editorial: "Military Accidents"]

[Text] Military accidents in strategically sensitive areas can, with a little ill will, be turned into political incidents. When two countries are affected by the course of events, it is only too easy for differing, even conflicting, versions of what happened to appear.

Incidents like the one that occurred on Sunday, when a Soviet fighter plane in contact with a Swedish Viggen plane crashed in international waters in the Baltic Sea, are fortunately rare. The Soviet Union has not denied that it was an accident. It occurred during Swedish surveillance of a Soviet exercise, and it illustrates the need for preparedness and today's pitiful realities.

An event of this kind must not be concealed. Once again one must express astonishment that the matter was not immediately made public by Swedish authorities. It cannot be all that hard to put the principles of an open society into practice in the form of factual and prompt information.

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CSO: 3650/283

MILITARY

SWEDEN

PAPER CRITICIZES SHORTCOMINGS IN LATEST SUB INTRUSION REPORT

Stockholm DAGENS NYHETER in Swedish 10 Jul 85 p 2

[Editorial: "Clearing of Ice"]

[Text] When spring came, there was also a clearing of ice in the reports on foreign submarine activity. Since the earlier report by the OB [Supreme Commander of the Armed Forces]--the thinnest and most uneventful since the current statistics began being kept 15 years ago--we have unfortunately returned to a more familiar situation. According to the latest compilation--which covers the second quarter of this year--new intrusions may have occurred. But "incontrovertible" proof--to use a new addition to submarine terminology--is lacking.

Demands for proof have gradually come to be emphasized more and more. The Armed Forces have become harder to please. To provide the government with a basis for its diplomatic activity, a high degree of certainty concerning observations is now being demanded, as before. Eyewitnesses may be mistaken, but in some cases there are indications--in technical systems, for example.

The Armed Forces will have to continue doing a thankless job with crippling resources. Calm has not returned to our waters for good.

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CSO: 3650/283

MILITARY

SWEDEN

# BILDT EXAMINES SCHEVCHENKO ASSERTIONS ON SUB INTRUSIONS

Stockholm SVENSKA DAGBLADET in Swedish 15 Jul 85 p 2

[Op Ed Article by Carl Bildt, Conservative Party: "Schevchenko and the Submarines"]

[Text] The defected senior Soviet diplomat Arkady Schevchenko told in SVENSKA DAGBLADET on 30 June about the background of submarine operations in Swedish waters. If his information is correct, the situation is extremely serious for Sweden. The photograph shows a Soviet Golf-class submarine photographed by the Swedish Coast Guard in the Baltic in 1982.

Behind a confusing curtain of unclear wording and half-finished stories, the Defense Staff last Monday reported that foreign submarine activity against Sweden is continuing.

During the first months of this year and until May the number of reports of foreign submarine activity was so small that there was reason to conclude that the activity was greatly reduced or even stopped. One solid reason for that was the unusually hard ice conditions in the Baltic.

But in June the picture changed. The number of reports, including those with high reliability, was back up to the level to which we became accustomed during the past years. Regional variations and tactical changes do not change the security policy aspects of continued submarine activities.

It is still too early to draw any definite conclusions about how the violations are going to develop during 1985 as a whole. Evaluation of the different observations usually takes time, and often new factors develop.

In an exceptionally interesting interview in SVENSKA DAGBLADET on 30 June the former senior Soviet UN official and acting secretary general Arkady Schevchenko expressed himself about the background of submarine operations against Sweden as he sees it. The interview with Schevchenko contained a great deal of interest for those who are interested in Soviet thinking in



general and the Soviet view of Sweden in particular. It is something of a mystery that it passed by the general debate almost unnoticed.

If Schevchenko's information about the motives for submarine violations is correct, it would have extremely serious consequences for the Swedish neutrality policy. Efforts from the Soviet side to utilize Sweden as the base area for combat forces with the mission of attacking NATO would naturally force NATO forces to fight Soviet combat forces in Swedish waters and islands. We would run the risk of being automatically drawn into every armed conflict between NATO and the Soviet Union.

According to Schevchenko Soviet submarine operations against Sweden were begun at the beginning of the 1970's. The objective was to find places which would be suitable for hiding nuclear missile carrying submarines in case of a war with NATO. At that time the Soviets were worried about the vulnerability of their old medium-range missiles in Europe, and therefore wanted to find "hiding places" for their missile submarines in Sweden and Norway. Schevchenko explained that the operations continued even after the deployment of the SS20 began in 1977 because even the SS20's are vulnerable.

A great deal of strategic logic can be seen in Schevchenko's argument. Still his theory does not agree with what we actually could confirm about submarine operations in the Baltic and against Sweden.

There is hardly any observable "break" in the statistics of submarine violations around 1970. Variations from year to year do not change the total picture of a continuing and largely constant activity, at least since the beginning of the 1960's. The "break" in the activity took place during the change from the 1970's to the 1980's. It was then that the activity expanded, the minisub system began to appear on a larger scale and larger combined operations against different parts of the country began to be seen.

The pattern which appears in the Swedish observations therefore does not agree with the pattern which would follow from Schevchenko's theory.

In addition there were no missile submarines in the Baltic before 1976, when 6 older Golf-class submarines with SS-N-5 missiles were transferred to the Soviet Baltic Fleet. These still patrol regularly, primarily in the south-eastern Baltic.

But even though these submarines are not as large as the oceangoing nuclear submarines, they are rather ungainly. The channels and fjords which are used by the submarines which are now penetrating our archipelago are for the most part physically impossible for a Golf-class submarine to utilize, even when surfaced.

In addition, it appears to be a less brilliant idea to try to "hide" large submarines in, for example, Harsfjarden or Karlskrona Bay. Here they would be immediately detected and could easily be fought because of their size and

ingainliness. The ability of the Swedish Navy to hunt minisubmarines in the inner archipelago is not satisfactory, but its ability to hunt "maxi-submarines" in the same area there is little doubt about.

In addition there should be better areas for the Soviet Union to hide its Golf-class submarines in. The Gulf of Riga can easily be closed off and protected by aircraft, and for these reasons should be almost ideal.

It is therefore difficult to get Schevchenko's information to agree with Swedish observations and known technical and tactical information about the submarine system in the Baltic. In the case of Norway, however, the theory can not be rejected in the same way.

Still submarines are here. They are obviously preparing for different eventual crisis and war situations. At the same time the development of Sweden's antisubmarine capability and--probably--the toughness of Swedish foreign policy are being tested. We all have reason to pay attention to how different statements and actions can be interpreted in this regard.

Shevchenko gives a thoughtful picture of Soviet foreign policy. His information deserves greater credibility in its general application than when it applies to different military-operational factors. In many cases sensitive military information is withheld from officials in the Soviet Foreign Ministry.

"In general the Soviet mentality and philosophy functions so that when one meets serious opposition, one withdraws. As soon as one meets a soft attitude the Soviets utilize the situation to their own advantage. That is a basic Soviet reaction."

On that point, Schevchenko's opinions are in good agreement with qualified Soviet research in other Western countries. It is a very important task to translate these views into a consistent, powerful and tough foreign policy as foreign submarine operations against Sweden continue.

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MILITARY

SWEDEN

# REPORTER VISITS SECRET COASTAL ARTILLERY FORTIFICATIONS

Stockholm DAGENS NYHETER in Swedish 11 Jul 85 p 12

[Article by Cecilia Steen-Johnsson]

[Text] There was some stir in the electronics-equipped innards of Malsten Island when the DAGENS NYHETER vessel "Amalia" glided slowly into the fishing port on the eastern side of the island. The entire island is military, and no civilian boats can tie up there without special permission.

But no one, even in his wildest fantasy, could make the "Amalia" look like a submarine, and besides, the commanding officer of KA 1 [Vaxholm Coast Artillery Regiment], Col Per Lundbeck, was standing on the pier as our welcoming committee, so the visit must be in order--that must have been the thinking of the watchful conscripts inside the rock.

Malsten keeps watch over the Danziger Narrows and the southern section of the Mysingen Strait in Stockholm's southern archipelago directly opposite Nynashamn. The island does not look especially inviting as one approaches it. The fishing port is littered with lots of dreary broken rock, and the entire island is studded with the rusty remains of barbed wire entanglements, old iron posts, and camouflage nets resembling wornout box springs.

## Not To Be Seen

Anyone sailing through the archipelago must at some time have passed by and wondered what people were doing on Malsten. The boats to Gotland pass by not far away, and a route for oceangoing cargo traffic is also nearby. But the intention is that no matter how good an observer's binoculars may be, Malsten Island's most important activity is not going to be seen at all.

The entire island has been hollowed out with rock cavities, corridors, and shelters like high-priced Greve cheese. The very modest red cottages on the island are peaceable military quarters and messhalls for men undergoing training and those on duty. What is hidden under genuine and fake rocks is not supposed to be seen from outside.

## Freezing and Waiting

The colonel told the civilians from the "Amalia" that Malsten had become important militarily during World War II, when called-up conscripts sat here freezing and waiting for the worst behind the powerful guns "Jenny" and "Bessy," both of 1898 vintage. Oh, they had other artillery pieces, too, but those two are still actually there.

## Festive Inauguration

Until the war began creeping closer to the Swedish coast, Malsten had been a base mainly for fishermen from Nynas. The fishing port was opened in 1937, and it was clearly the first instance of government support for fishing. A young, newly hired DAGENS NYHETER feature writer who signed his articles "Red Top" described the vivid opening in June 1937. He wrote:

"The festivities were already beginning in Nynashamn when the guests arrived. Down at the town's fishing pier, a high-spirited band had set itself up and was playing one number after another while the guests embarked on the 11 flag-bedecked motorboats waiting to take them across the blue Danziger Narrows to Mellsten [Malsten]....

"The guests, led by Governor Eden, clambered on board, and after about an hour's trip across the sea, while the groundswell following the latest storm still rolled softly and schooners swept past in full sail, they arrived on smooth water under Mellsten's lofty granite cliffs, where people from the coast artillery are busily blasting fortifications in the rock and pouring the foundations for the antiaircraft artillery that will be deployed out there."

## No Boats

The fortifications are still there nearly 50 years later, but the fishing boats have had to move away. Malsten is again being manned all year long after several years in which it was used at most as a summer island for coast artillerymen undergoing training.

Now they are freezing on Malsten again.

"It was 11 degrees below freezing in the enlisted men's messhall last winter," says Per Lundbeck. "The old buildings they used for quarters are also very poorly insulated--they were built during the war, of course--and the filling material has slipped and become packed down at the foundations."

## Idyllic

Last winter, they were constantly taping, caulking, and sealing to keep out at least part of the severe cold. The new barracks, on the other hand, are up to good Swedish municipal standards. That is where the conscripts live by twos behind curtains with ducks on them, and it all looks very idyllic in the warm summer. The island's interior is actually intoxicating: birds are singing and swallows are swooping around catching food for their young.

The colonel says: "In fact, there are also some quite rare orchids here, but don't ask me what they are called or what they look like, because I don't have the slightest idea."

At the very top of Malsten is a hillock that looks "washed out." In fact, it is artificial, with peculiar horizontal slits. It is a shelter with a good view of the channel. But the best view, or rather, insight [a play on words in Swedish], is of course that enjoyed by the electronic nerve center located in cool rooms inside the rock. A couple of men are always sitting there keeping watch over the shipping entering and leaving the narrows. They also know what is moving under the water. Since full-time surveillance began here, there has been a significant reduction in what is called "underwater activity of unknown origin." In other words, there are fewer probable submarines.

"Wherever they come from, our uninvited guests have calmed down since we stepped up our surveillance," says the colonel, and he looks very pleased about it.

#### Depth Charges Ready

And if there should be a repetition of what happened, for example, in 1982, the depth charges are now ready on the ships' decks. But now, of course, the only military activity in the sea around Malsten is that represented by the small tender that carries personnel and conscripts back and forth to the mainland.

Thanks to the submarine incidents, training and organization within the coast artillery have been revamped. To a great extent, today's coast artillerymen have become submarine hunters. Training has been broken down into streams, and as regimental commander, Col Lundbeck can be said to resemble most closely the principal of a large senior high school with over 200 different lines of education.

Per Lundbeck says: "We have come to the conclusion that everything works best if we ourselves train all the necessary personnel. Then we have the best coordination in the field."

#### Increased Importance

It is obvious that the coast artillery has squared its shoulders with pride and feels that it has become more important to what is called the nation's security in peacetime.

Now, as in a time of emergency, Malsten is waiting for something that must not happen.

And there are a few ways to pass the time while waiting even on a rocky and rugged island like this one. The men have managed to set up a dusty soccer field, and more than a few guys put out to sea in small boats to catch cod and herring in the evenings. Some like windsurfing. And one indoor pastime is video as a change from the monotonous radar screens.



## Cemetery for Cholera Victims

People have waited on Malsten in earlier times as well. Once when excavations were going on in the middle of the island, the workers discovered some old bones--the remains from a cemetery for cholera victims. The bones now lie all together in a circle behind chains, watched over by a signboard put up by the church council. Close by is a larger circular space, a labyrinth of cobblestones that was probably built by fishermen blown ashore during the Middle Ages. That pastime may also have had some magical significance.

Modern magic on Malsten is controlled by other forces instead--electrical impulses that rush around in microcircuits. And conscripts that rush around the labyrinths inside the rock, hopefully without getting lost.

## Low Catch

On that sunny day, Malsten was serving parsley-stuffed fillets of herring and mashed potatoes provided by the kitchen under the rock. Then the "Amalia" put out from shore and turned its back on Malsten. The next port was to be our home pier in Nynashamn. In the distance, a huge log raft was passing, and it was moving at an awfully slow pace.

"A good argument in favor of sea transportation," commented our skipper.

He stopped the engine and let the "Amalia" drift for a while. We cast our lines for cod. And now we know where one must absolutely not fish if one does not want to risk a low catch. Under that broiling sun, we caught a total of eight cod.



The military on Malsten keeps watch over Danziger Narrows and the southern section of Mysingen in Stockholm's southern archipelago.

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MILITARY

SWEDEN

#### TRAINING PROBLEMS EXPERIENCED WITH TOW ANTITANK MISSILES

Stockholm SVENSKA DAGBLADET in Swedish 15 Jul 85 p 7

[Article by Erik Liden: "Training Problem in the Army--Only One Missile in Three Functions"]

[Text] New problems have arisen with the antitank missile TOW which worry the army leadership. The missile simply does not function in demonstration firings. The conscripts also have malfunctions despite extensive simulator training.

"It is not reasonable that an entire refresher training session gets to see one single missile function out three fired," said Armored Corps inspector Hakan Waernulf. "Besides investigation of the malfunctioning TOW missiles and the missiles from which the control wire has come off, we must immediately consider firing more missiles, both during basic and refresher training so that the conscripts will regain confidence in an important weapon in our war organization."

During the spring and early summer more than 10 missiles have malfunctioned. Each new TOW missile today costs nearly 100,000 kronor, while the first TOW missiles that Sweden purchased and rebuilt for refresher training firing cost 30,000 kronor per missile. That is because TOW was developed in three versions, of which Sweden bought most of the middle version, and a smaller number of the most modern TOW 2.

#### The Best Weapon

The dart projectiles against tanks and TOW 2 are the best weapons today in the Swedish Army for defeating modern tank armor, which an enemy would fully deploy at the end of the 1980's.

"It is therefore very urgent to solve the problem of the TOW," said Waernulf. "Building an antitank missile for distances up to 4 kilometers has turned out to be more complicated than many technicians thought. The technology with a wire to the missile which quickly reels out on firing is delicate. Several wire breaks have been observed, and sometimes the wire has caught and the missile 'ran away'."

The problems which arose with the firing from the missile vehicle at Kraks firing range in Vastergotland have now been solved. The cable which got caught when the missile was launched has been rebuilt, and a signal now shows the operator if there is current at the moment of firing.

#### Project Delayed

Sweden has invested 300-400 million kronor in TOW, a smaller amount than many other countries in Europe, but operational uncertainty is causing problems for important test firings from the antitank helicopter BO 105 which should soon take place at Vidsel in Norrbotten. Different problems with the sight, for example, have already delayed that project. Previous less successful test firings in the United States call for successful TOW firings in Sweden.

"We simply cannot have more failures just now, despite a certain tolerable percentage of failures for TOW," said Colonel First Grade Dag Tornblom in FMV [Defense Material Administration]. "If the firing failures continue on the ground we must fire more real TOW missiles during all training phases."

In the Armored Corps they are considering firing at targets less than 1,000 meters away with other weapons than TOW in order to avoid the aiming difficulties with very short times of flight.

"TOW is the only qualified weapon that we have for distances over 2,500 m.," said Hakan Waernulf. "Even if we get better and better tank ammunition, the technical difficulties and firing failures of TOW must be remedied as soon as possible."

#### American Missile

Despite the recently revised political interest in the Swedish missile industry and the problems with TOW, the defense forces this year ordered another American missile, Hellfire, for amphibious units in the coast artillery. In the United States, Hellfire, with a range of 5 kilometers, has had greater development problems than TOW.

The laser technology which controls the missile can be rather easily interrupted. The Swedish project, including the SABO missile produced by Saab and Bofors, could with an additional 6 months study have proved to be superior to Hellfire. SABO could have given Sweden a reputation in the missile area. The Swedish missile could be interrupted without the missile in the final phase of its flight missing the target.

The Hellfire decision has led to a debate about the development corporation SBMC (Saab-Bofors Missile Corporation), the liquidation of which is not excluded despite the social democrat missile investment.

A source in the Defense Staff said, "Sometimes one gets the impression that one hand does not know what the other is doing."

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MILITARY

SWEDEN

# ARMORED CORPS INSPECTOR ON PROCUREMENT GOALS FOR 1990'S

Stockholm SVENSKA DAGBLADET in Swedish 14 Jul 85 p 6

[Article by Erik Liden: "The Boundaries Between Armor and Infantry Will Be Gone in a 1990's War"]

[Text] "The Swedish defense forces need offensive weapons and powerful mechanization before the turn of the century. That includes a decision about a new tank, a project in the 10 billion class. Simpler armored vehicles and antitank ammunition for mortars should on the other hand be eliminated.

So said the new Armored Corps inspector, Colonel First Grade Hakan Waernulf, the youngest Armored Corps inspector in Sweden so far. He recently turned 50 years old. He is strongly critical of the army's shrinking purchases of new equipment, only 17 percent of the army's appropriation today goes for material. Waernulf is also concerned about new technical ideas which he does not believe are sound for the next century's combat environment.

"When for economic reasons today we are forced to speak about armored cars as being effective in combat in the 1990's, I can only say forget it. We must have armored fighting vehicles with cannons and missiles in order to have a chance against our presumed enemies. The conscripts must get protection worthy of the name."

## Crawling is Obsolete

"That means that we must in the future erase the boundaries between armor and infantry, more soldiers will fight from different kinds of tracked fighting vehicles. It is obsolete to fight running or crawling on the ground."

Hakan Waernulf is an enthusiastic supporter of a new tank for the 1990's in order to be able to meet an enemy with power, for example in Skane, and force the attacker back into the sea. Political decisions must be made by 1992 at the latest, and will require about 10 billion kronor, one-fourth of today's investment in the air force's JAS-39 "Gripen."

"It is an important confidence factor for the peacekeeping ability of our defense forces with the taxpayers and conscripts that the army gets a qualified attack weapon which has a real credible capability. At least three of our four armored brigades must be renovated."

#### Tanks on License

"Despite the successful modernization we are now doing on Centurion and Tank S, they only have a remaining lifetime of 10-15 years. That will not prevent them from entering mechanized brigades behind the most modern armored brigades in the next century.

"My judgment now is that Sweden has built its own last tank. Manufacture under license or other forms of cooperation both for development and production of, for example, the next tank generation in West Germany, Leopard 3, is today the most probable solution."

Waernulf, who among other things has had experience at the Armored Forces School in Skovde, emphasized that a new tank must have a real development potential, which Tank S, because of its complicated construction, did not have to the desired extent.

"That does not mean that Tank S will not be a good antitank weapon together with the infantry cannon vehicle 91 in the new mechanized brigades. A new cannon 91 from, for example, Leopard 1 is needed, however."

#### Better Quality

Waernulf pointed out that the quality in many areas must be reinforced in the army in order to obtain the right balance between protection and attack power.

"I am in total agreement with the rest of the army leadership about procuring 450 new fighting vehicles of type 90, even though they have become much more expensive than the original proposal. On the other hand, should we postpone further procurement, which would probably be in Sweden, until we have evaluated the effects of this shrapnel protection on the war organization."

The new fighting vehicle would be effective against both ground and air targets. The most common version will have a 25 mm cannon, some form of missile and room for at least 8 soldiers. This fall the army will test whether it is sufficient with a 40 mm cannon for attack missions, or if a 60 mm is required. In both cases it will be necessary to fire with under-caliber ammunition, so-called dart projectiles with high muzzle velocity.

#### Important Step

The next step is to give antiaircraft and artillery shrapnel protection so that they are not constantly regrouping on the battle field. That is important for psychological reasons.



Hakan Waernulf is very skeptical of the investment in indirect antitank ammunition, especially that which is made by FFV's [Swedish National Industries Corporation] Strix for mortars.

"It is not reasonable to believe that mortars have a chance to be effective from that battlefield sector where we do not even assemble tanks. If the technology makes it possible to fire on moving targets and then mostly with long range artillery, it can then be worth it, even though the costs will be in the billions.

"Mortars against moving armored targets are a utopia and definitely a mistake," said Waernulf.

#### Believe in Bill

On the other hand Waernulf believes in Bofors latest product, the light anti-tank missile Bill, which operates above tanks where the protection is weaker, with an explosive charge directed downward when the missile passes the target.

"A drawback is the high development costs, which mean that the investment in export must be successful."

Bofors has invested 400 million kronor extra to be successful. The first official test firing on 24 September will therefore be a very important test.

Development of modern armor is also taking place in Sweden to increase protection. Both active armor, which destroys the weapon with directed charges, and composites, a mixture of for example armor and glass with the same effect, can be mounted on existing tanks. A number of million kronor will this fall be set aside for this protection on the front and sides.

#### Missiles or Ammunition

Protection against ABC warfare and attack against vehicle tops must also get priority. A balance between investment in missiles, which can be destroyed, and tank ammunition must also be made after the problems which arose with the American antitank missile TOW.

"Besides it is a very important question of confidence," said Hakan Waernulf.

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MILITARY

SWEDEN

## DECISION ON ORDERING ADDITIONAL CORVETTES DELAYED UNTIL FALL

Stockholm SVENSKA DAGBLADET in Swedish 30 Jun 85 p 8

[Article by Erik Liden]

[Text] The Swedish Navy is not going to get any additional coastal corvettes for the time being. The government has postponed the planned ordering of four corvettes. A decision will not be made before November.

The navy had been counting on approval of that 1-billion-kronor order before the end of June. Preparations had been made in the Ministry of Defense, but it had been clear that funds earmarked for that purpose would barely cover the big investment. Each coastal corvette will cost 250 million kronor if built at the Karlskrona Shipyard.

### To Be Divided up

Parliament's defense decision earlier this year ordered that large investments in materiel be spread over the fiscal year so that the government could make another cost control study of defense appropriations this fall. The Ministry of Finance therefore insisted that the order for coastal corvettes be delayed for the time being.

### Helicopter Engines

Another cloud of anxiety in connection with the coastal corvettes is being caused by the acute need to replace engines in the defense force's heavy helicopters, most of which are used in antisubmarine operations. It was felt in the plans that engine replacements could wait a few years. But cracks in the turbines--reported earlier by SVENSKA DAGBLADET--have meant that most of the ASW resources this summer have had to be provided by patrol boats and other navy vessels. The engines in the helicopters simply cannot handle heavy loads. Replacing the engines in all 20 helicopters will require between 400 and 500 million kronor.

## Opinion Divided

It is also known that political opinion is divided over the need for coastal corvettes. The two on order ought to be carefully tested before new orders are issued, says one source in the Ministry of Defense. That will also give the Defense Committee an opportunity to make a careful study of whether coastal corvettes Nos 3 through 6 can or will be ordered. Appropriations are the main problem.

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ECONOMIC

AUSTRIA

## OEVP PROPOSES SELLING OF STATE ENTERPRISES

Vienna PROFIL in German 8 Jul 85 pp 12-13

[Article by Walter Schwarz: "State Summer Bargain Sale--A Denationalization and Private Property Forming Concept Proposes Sale of State Enterprises"]

[Text] Though the package is contained in 40 closely printed pages, its content is certain to be explosive. Next Thursday the national party leadership of the OeVP [Oesterreichische Volkspartei--Austrian People's Party] will discuss the draft of a "Denationalization and Private Property Forming Concept" which has been sweated out inside the party. Such catch phrases as "Property for All" and "More Private, Less State [Property]," are followed by proposals for reforms of the tax and social security laws and for 11 specific steps "toward the reduction of the current extremely high percentage of state and nationalized enterprises."

Herewith the 11 proposals of the black OeVP denationalizers:

--limitation of direct financial support to the economy; less government involvement, more private capital;

--the promotion of "junior" securities should be incumbent on all corporations, regardless of ownership and product lines;

--elimination of public enterprises from government domination, to the end that "economic public enterprises be managed (as far as possible) exclusively in organizational forms provided for in civil law codes of the commercial law" (quoting from the OeVP draft);

--denationalization of enterprises under partial federal control;

--privatization of enterprises under partial provincial control;

--critical examination by the public sector of the "investment portfolio" of nationalized industry. Fractional investments by the OeIAG (Austrian Industrial Corporation) for whose continued existence there is "no economic justification" are to be put on the block;

--contributions from their own capital by the OeIAG and/or the government-dominated banks in "any reorganization of their subsidiary enterprises" for which employees' funds are used;

--sale of a portion of federal and provincially-owned forests;

--sale of community or cooperative-owned apartments to interested renters;

--reversal of the "burden of proof" in judging public sector enterprises. In plain text: it should not be up to the person opting for the private sector to "prove" the logic of his wishes; rather, the public sector should be required to demonstrate why it requires partial ownership of an enterprise to fulfill its political tasks:

--overall, there should be "increased commercialization" of "those enterprises remaining under the control of the public sector." Some details on this: in limiting direct support from public funds, the OeVP proposes a phased reduction of 10 percent per year. This would "lay the groundwork for denationalization." Government responsibility should be restricted primarily to the areas of export and innovation. For transferring federal partial investments to the private sector, the initiation of partial privatization, the sale of minor and minimal investment shares and the sale of majority ownerships are proposed. According to the OeVP concept, partial privatization would be appropriate for 15 enterprises, among them such "chunks" as the CA [Creditanstalt], the Laenderbank, the DDSG [Donaudampfschiffsfahrtgesellschaft--Danube Steamship Lines] or the AUA [Austrian Airline]...

Capital contributions by the OeIAG or the banks "in any reorganization of their subsidiary enterprises" is illustrated by the OeVP with the example of the CA subsidiaries under the control of Hannes A. [Hannes Androsch, Creditanstalt president]:

--"sale of an additional 9 percent of federally owned CA shares to private investors;"

--"total or partial sale of profitable CA investments in the industrial, trade for service areas to private investors."

Also to be distributed among the people, at least partially, is the considerable real estate of the federally owned forests (784,000 hectares): "The OeVP proposes that over the next 5 years up to one-third of the state-owned forests be offered for sale to private investors," according to the discussion paper. Property creation and privatization "in all sectors of the economy and in all enterprises, regardless of their corporate structure" are to be made possible by comprehensive changes in the tax and social security laws. The OeVP draft emphasized that the beneficial ownership certificate and investment encouragement by Treasurer Franz Vranitzky constitutes a starting point which must be expanded into an ongoing privatization and property concept."

The real hit of the proposal is the creation of a "participatory certificate" in further evolution of the existing beneficial ownership certificate. This should ensure direct participation in enterprises of whatever corporate structure, based on the provisions of a share certificate. The features of the "participatory certificate" are as follows:



--direct participation (not through a fund, as under the old participation fund law);

--it is a personal ownership certificate;

--it represents a personal capital investment not subject to call;

--participation in profits and the proceeds of liquidation; losses are limited to the amount of investment;

--its purchase would provide a tax break similar to the beneficial ownership certificate under the special issue category;

--dividends are deductible from taxable income; no additions to self-employment tax; prorated deduction from property tax as is the case with stocks.

For common stock, the OeVP calls among other things for inclusion of the purchase of "junior" securities in the special issue category for beneficial ownership certificates. A further proposal would make worker investment in their employer enterprise "possible under any legal code." Specifically:

--employer contributions to the employees for the purpose of employee investment in the enterprise would be tax free up to a maximum of 10,000 Schillings per year:

--should the employee purchase a "participatory certificate," the employer may cancel it if the employee leaves his job;

--if an employee becomes a "co-owner", his income tax advantage (the 13th and 14th months' salary) must not be impaired unless his participation exceeds 5 percent.

Capital investments in corporations undergoing reorganization (including those in the grey area of the public sector) should be particularly encouraged. The need for capital which occurs in these situations must "not automatically be thrown in the lap of the taxpayer," to quote the draft. On the contrary, private investors should be tempted by the following benefits:

--the issue of convertible bonds with right of conversion to common stock;

--tax free interest, as it is for debt obligations;

--when converting to common stock, 75 percent of the stock purchase price should be tax deductible as a special issue;

--for corporations, the increase in capital would be free of social security tax.

According to the calculations of the OeVP property generators, who for the moment see the concept merely as a basis for discussion, there would be no added budget costs if direct financial support would be curtailed while at the same time the investment tax were done away with.

ECONOMIC

DENMARK

## FIRST TRADE SURPLUS IN 1985 EVOKES HOPE FOR ECONOMY

### Export Growth Encouraging

Copenhagen BERLINGSKE TIDENDE in Danish 25 Jul 85 Sect III p 3

[Article by Jens Trudso: "Trade Surplus for First Time in 1985"]

[Text] Preliminary trade figures for June show a trade surplus of 1.3 billion kroner, but ship sales have improved the trade figures extraordinarily.

For the first time this year, there was a surplus in June in the Danish foreign trade. The preliminary trade figures from Denmark's Statistics show that the trade surplus was 1.3 billion kroner, but seasonally adjusted, there is a deficit of 1 billion kroner.

In May this year, there was a deficit in the trade balance of 1.7 billion kroner in actual figures. The actual figures for June this year show imports of 16.2 billion kroner and exports of 17.5 billion kroner.

When the figures are adjusted for seasonal changes and with ships and planes subtracted, imports were 16.6 billion kroner while exports were 15.6 billion kroner.

Ship sales have improved the export figures by nearly 2 billion kroner.

In seasonally-adjusted figures, exports during the period between February and June have progressed as follows:

14.2 billion, 14.1 billion, 12.9 billion, 13.3 billion, and 15.6 billion kroner.

Imports during the same period:

16.3 billion, 15.8 billion, 14.1 billion, 14.4 billion, and 16.6 billion kroner.

Thus, the deficit has been cut in half from 2.1 billion kroner in February to 1 billion kroner in June.

### Positive but Waiting

Jorgen Ronnest, chief economist for Den Danske Bank [The Danish Bank], states that is positive that now there is the prospect of an improvement in the balance of trade. The preliminary figures for June show that imports have slowed a bit, while exports have increased substantially.

"We must have the figures for the coming months before we can decide whether the tide has turned, but the improvement in June will provide greater possibilities for achieving the government's goal of a deficit of 16-17 billion kroner this year," states Jorgen Ronnest.

### No Marked Improvement

Jyske Bank's chief economist Hans Jorgen Larsen says that the June trade figures are positive and that there now is a surplus in the balance of trade in actual figures, but there has been no marked improvement in the general economy.

He asserts that exports have increased substantially as was expected following the flattening out in April and May as a result of the conflict.

But on the minus side, Hans Jorgen Larsen says that imports have increased substantially. Even though a portion of this increase can be explained on the basis of extraordinarily large imports of fuel, it is important to determine whether it is private consumption or the building up of supplies which forms the basis for the increase in imports.

### As Expected

The new chief economist for Handelsbanken [The Trade Bank], Per Bendix, says that he will not comment on the preliminary figures from Denmark's Statistics, but states that by and large they are as expected.

"It would be a little crazy every time there are preliminary figures to make general comments about the Danish economy. In the coming months, that which will be decisive will be to see whether the initiatives which have been taken both politically and on the part of the business community will improve exports," states Per Bendix.

### Industry

Director Verner Puggaard of the Industrial Council asserts that even excluding ship sales of 2 billion kroner, there has been an increase in exports. Despite the expected advance in exports, there is still a large seasonally-adjusted deficit.

"The actual trade figures look good, but we lack an explanation for what lies behind the increase in imports," states Verner Puggaard, who adds that it is necessary to see the figures for the coming months before an evaluation can be made of whether the tide has turned.

### More Orders

He states however that the latest market evaluation by industry shows increasing numbers of orders in favor of exports and a decreased domestic demand in the fall months should be counted on.

Market barometer surveys show that in the third quarter of this year, industry expects a significant increase in production and orders relative to the second quarter. Production is expected to increase by 26 percent of the overall employment in industry and a limited increase in employment itself is expected.

The market barometer is worked out on the basis of evaluations from leaders in about 650 larger industrial firms which encompass about 60 percent of those employed in industry.

### Economy Minister Comments

Copenhagen BERLINGSKE TIDENDE in Danish 25 Jul 85 Sect III p 3

[Article by Helle Ravn Larsen: "Anders Andersen: Breakthrough in Balance of Payments"]

[Text] Economy Minister Anders Andersen (Liberal) seriously believes that the trend in the balance of payments deficit is about to turn--not the least because industrial exports have increased substantially compared with last year. The fact that the positive development will not occur completely this year does not seriously concern the economy minister. In contrast, the Social Democrats do not find the trade figures particularly uplifting.

"Of course one always can wish for better trade figures, but I believe and hope that the trend will continue and I count on a significant improvement in the coming months."

### No Intervention

"We can just as well bury the intervention question for a good period of time," states Economy Minister Anders Andersen (Liberal) in a comment on the just-released trade figures for June which, for the first time this year, show a surplus in the balance of trade.

### Actual Figures Decisive

Anders Andersen does not attach much significance to the fact that the seasonally-adjusted figures show a deficit of about 1 billion kroner.

Nor is he concerned with the fact that the surplus is attributable primarily to the sale of ships. He believes that what is decisive is the actual figures.

"What one should be concerned about is the increase in industrial exports, which have increased by 21.3 percent relative to June of last year. I also believe that this figure will increase in the coming months.

"In June of last year, the deficit was 420 million kroner, but in June of this year, we imported fuel worth 500 million kroner more than last year. If the import amounts had been equal, we then would have had a surplus," states Anders Andersen.

#### Plus or Minus a Billion Means Nothing

Even though it has been pointed out by many that the figures really are not yet so good, Anders Andersen is completely confident that the trend of increasing exports and decreasing imports will continue into the future, not the least due to the fact that the government's stringent income policies will be felt during the fall, and the same applies to the decline in interest rates and the falling dollar exchange rate, which also will prove to have a positive contagious effect in putting an end to the balance of payment deficit.

"But whether the deficit becomes a billion more or less than projected actually does not mean very much. As long as the positive trend continues, the effect will be felt in 1986. Additionally, basic savings and the earlier payment of tax balances--which likely will mean an economic tightening of 4-5 billion kroner--will have a positive effect on the balance of payments," states Anders Andersen, who points out that we also will save money if the dollar exchange drops under the level which the government has calculated in its estimate of the deficit for the year, and these also will figure into the evaluation of our picture of health."

#### Auken: "Not Uplifting"

The Social Democrats' political spokesman Svend Auken does not find the surplus particularly uplifting, but rather, exactly the opposite.

"The deficit in the balance of payments will be a record high--perhaps over 13 billion kroner in just the first half-year. The government apparently has decided to allow the skewed trend to continue at least until after the municipal election," states Svend Auken, who recommends that export efforts be increased and that the importing of goods and energy for luxury consumption be decreased.

"For it would be fundamentally unfair if the problem must be solved through an increase in the value added tax and through cutbacks in social programs," states Svend Auken.



Agricultural Export Boom

Copenhagen BERLINGSKE TIDENDE in Danish 25 Jul 85 Sect III p 4

[Article: "Agricultural Exports Increase by 1 Billion Kroner"]

[Text] Exports of agricultural goods have increased this year by nearly 1 billion kroner during the period from January to May relative to the same period last year. This amounts to an advance of five percent according to a summary made by the Danish Agricultural Union.

It is particularly pork, together with grain and seed products, which have pleased foreign countries. During the period, pork worth nearly an additional 500 million kroner has been sold, while sales of grain and seed products have advanced by nearly 1 billion kroner.

The advance for grain and seed products is due to the record harvest last year.

In contrast, there has been a decline in sales of butter and cheese to foreign countries. During the period from January to May this year, sales of butter have been set back to a level which is 16 percent below that for the same period last year.

The amount of cheese sold was worth 250 million kroner less than during the same period last year. Exports of feta cheese to Iran have been halted and that is the reason for the decline in cheese exports.

Overall, during the period, agricultural products worth 17.6 billion kroner were sold to foreign countries, as contrasted with 16.8 billion kroner during the same period last year.

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ECONOMIC

DENMARK

ECONOMIC EFFECT OF EC MEASURES AGAINST SOUTH AFRICA VIEWED

Copenhagen BERLINGSKE TIDENDE in Danish 25 Jul 85 Sect III p 3

[Article: "EC Tightens Code of Conduct for Activity in South Africa"]

[Text] The Common Market countries are preparing for a tightening of the rules and recommendations applicable to European firms' undertakings in South Africa.

In Denmark, the tightening will affect only two firms--OK [East Asiatic Company] and Novo. The other firms which have South African interests have such limited activity that they will not necessarily be affected by the new restrictions. They include, among others, Nilfisk, Sofus Berendsen and Lego.

The Common Market countries have discussed at the administrative level a tightening of the so-called code of conduct which was approved in 1977--certainly a significant event for the political cooperation within EPS [expansion unknown]. The first administrative-level meeting was held in May and the next one is to be held in August.

Evaluations of a revision were commenced prior to the Common Market foreign ministers deciding on Monday to expand and tighten the code of conduct. According to the foreign ministers, the objective is for the code and the European firms to contribute more effectively to the abolition of the system of apartheid in South Africa.

The code requires firms to implement work rules which are equal for Blacks and Whites, and for equal pay for equal work, and that Black workers must have the right to form labor unions.

The code is voluntary, and Common Market countries likely will retain the requirement for voluntariness, even though there perhaps will be a tightening in this area. Holland has recommended a mandatory code, but the foreign ministers would not adopt the Dutch demand on Monday. Ritzau [Danish news bureau] understands that Denmark is willing to support Holland.

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ECONOMIC

DENMARK/GREENLAND

BRIEFS

RECORD LOW COD CATCH--The Greenland cod catch is expected to set a record low this year according to a forecast issued by Greenland's Fishing and Environmental Survey, Greenland Radio reported in its Friday news broadcast. Biologists originally anticipated good fishing in 1985 and 1986 because large quantities of cod roe and young cod were reported in 1982. But studies show that those fish have almost disappeared, causing the biologists to sharply revise a forecast for the first time. In the first 5 months of this year 1656 tons of cod were brought in, a record low. But the Greenland Fishing and Environmental Survey predicts that fishing could be even worse next year. On the other hand, shrimp fishing in Greenland continues to be excellent, which may have a connection with the small amount of cod. When there are fewer cod feeding on the shrimp, more shrimp are available for people to eat. [Text] [Copenhagen BERLINGSKE TIDENDE in Danish 22 Jul 85 p 29] 6578

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ECONOMIC

FEDERAL REPUBLIC OF GERMANY

KLOECKNER CHIEF REVIEWS FAILURE OF MERGER WITH KRUPP

Duesseldorf HANDELSBLATT in German 11 Jul 85 p 12

[Article datelined tto, Duisburg: "Henle: Mergers Will Come Nonetheless"]

[Text] "I remain convinced that in the next 10 years mergers will take place in the German steel industry, with the exception of the largest enterprises." This statement was made by Joerg A. Henle, chairman of the supervisory board of Kloeckner-Werke AG, Duisburg, after it became known that the steel merger between Kloeckner-Werke AG and Krupp Stahl AG, with the participation of the Australian raw materials enterprise CRA, had failed.

It is regrettable that measures are not being taken today which would be decisive for the structure of the industry during the nineties. If state support measures abroad in favor of foreign steel enterprises were to continue, even in the case of possible mergers, the day will come when these restructured foreign firms will demand liberalization of the market while German enterprises will depend on market controls, which would mean a complete reversal of former conditions.

According to Henle, the merger failed because the political framework did not create preconditions ensuring the start-up with state aid. By contrast, internal reasons had played no part. Henle: "In my opinion, there were no relevant open questions between the partners which would have caused difficulties." The reproach that the pertinent papers had been given too late to the auditing company, Treuarbeit, and that the plan was not convincingly presented in detail, must also be rejected.

Henle: "Herr Scheider (chairman of the Krupp supervisory board) and I would certainly not have gone to see the federal chancellor last week if the figures had not previously been given to Treuarbeit." The meeting with Chancellor Kohl took place on Thursday of last week (4 July). The chancellor was informed of the matter, but there was no factual discussion.

One result of the failed merger is the decision to modernize the Georgsmarienhütte, which otherwise would have been shut down, by building a

continuous casting plant at an investment expenditure of about DM 100 million. This will result in efficiency savings of DM 60 to 70 million. Together with other measures, the Kloeckner-Werke going it alone could achieve efficiency savings of over DM 100 million. (In the merger, cost savings were to amount to about DM 250 million per year.)

In the opinion of Joerg Henle, 12 May, the day of the Landtag elections in Rhineland-Westphalia, was decisive for the fate of the merger. It became clear that political thinking rather takes the short-term view, as in the question of preserving immediate jobs, while enterprises take the long-term view, such as securing those jobs in the German steel industry which will survive a wave of efficiency drives.

The foreign partner of Kloeckner-Werke AG, CRA, meanwhile has acquired a share of about DM 100 million of Kloeckner capital (mostly through convertible loans). Henle assumes that cooperation with CRA will continue to be good not only in technical respects, but that it might be strengthened further, possibly in the form of investments in foreign business commitments. However, CRA will first have to overcome the shock caused in the enterprise by the decision to give up the merger.

[vst Hannover] Although the government of Lower Saxony had had no objection to the planned merger of the steel sectors of Krupp and Kloeckner, the closing of the Georgsmarienhütte plant near Osnabrück had been unacceptable, according to a statement by Minister President Ernst Albrecht to journalists. For this reason, he had urged Chancellor Kohl to refuse additional subsidies, and had also demanded the repayment of DM 15 million to Lower Saxony in case the plant were shut down. The construction of a continuous casting plant was desirable in order to ensure Osnabrück [jobs].

The required investments, already mentioned earlier, amount to about DM 80 million. According to Albrecht, in addition to the European Community which is expected to contribute 30 percent, further development funds might come from the federal government and from Lower Saxony. In Albrecht's words, after construction of the continuous casting installation, the Georgsmarienhütte plant will be competitive. CDU Landtag deputy Hermann Sandkaemper, deputy chairman of the Georgsmarienhütte works council, denied reports claiming that the plant's work force would have to be reduced from its present number of about 2,400 to 1,700 or 1,800. In his opinion, there would only be about 180 to 200 lay-offs after the start-up of the continuous casting installation.

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ECONOMIC

FEDERAL REPUBLIC OF GERMANY

#### RECOVERY SEEN BRINGING LITTLE CHANGE IN JOB MARKET

Duesseldorf HANDELSBLATT in German 10 Jul 85 p 5

[Institute for World Economy at the University of Kiel: "Economic Recovery Will By-pass Job Market"]

[Text] The Institute for World Economy at the University of Kiel expects the real national product to rise by only about 2 percent on the average in 1985. In 1986, growth of the national product will probably reach 3 percent. Problems in the labor market, however, would not become fewer at this rate of production increase.

According to the forecast by the Institute for World Economy, the financial balance of the state sector is to decrease in 1985 by about DM 10 billion to DM 26-30 billion. The ratio of public expenditure to gross national product would drop slightly to about 47.5 percent. The policy of the federal government allows the assumption, however, that budget consolidation no longer enjoys the same priority as in recent years.

Although the expansion of demand from abroad weakened, it proved to be a supporting factor of production development even after the turn of the year 1984-1985. However, real goods export will not increase in 1985 at the same rate as in the previous year. This is supported by the fact that economic expansion in the United States is taking place at a moderate rate and that the economic situation in Western Europe will not improve significantly.

#### DM Devaluation Process Will Not Continue

In addition, the trend is for the D-Mark not to decrease further in real terms vis-a-vis the U.S. dollar--nor vis-a-vis other currencies--, so that no improvement in price competitiveness can be expected for German suppliers. During the further course of the year 1985, real goods exports will probably increase by a current annual rate of about 6 percent. Because of the high level of exports at the beginning of the year, average annual exports in 1985 will be about 9 percent higher than in the preceding year. For 1986, an increase of probably about 6 percent in real goods exports is foreseen.

Despite the investment allowance, investments in machinery and equipment did not live up to expectations as an economic "motor" during the first two years

of recovery. The increase in the investment ratio lagged noticeably behind developments during earlier cycles. Only in recent months has a more dynamic investment trend appeared. The yield from physical assets had increased noticeably in the course of the upswing, but it continues to stay below the yield of financial investments. During 1985, an average increase of 10 percent is expected in investments for machinery and equipment.

In view of the unfavorable situation of incoming orders, a strong drop of 10 percent in housing construction investments must be expected in 1985. For the average of 1986, a further decrease in housing construction investments is foreseen, albeit at a lower rate. For the annual average of 1985, industrial construction will probably be 2 percent below the level of the previous year, which rose excessively because of the investment allowance. Construction investments in total--due to the weakness in housing construction--will be about 5 percent lower in 1985 than in the preceding year. For the annual average of 1986, construction investments will probably be at the level of the previous year.

Private consumption during 1985 will probably be at the level of 1984. In 1986, when the first stage of the tax reform comes into force, incomes after taxes will be higher by about DM 10 billion. With little change in savings attitudes and continued moderate price increases, private consumption spending will rise by about 2 percent in 1986.

On an average for 1985, the real national product will probably grow by over 2 percent. About half of the growth of the national product is due to the increase in external surplus. In 1986, somewhat stronger domestic demand can be expected, particularly from private households. Although the external contribution in 1986 will probably rise only by half as much as in the previous year, the national product increase will be around 3 percent.

The number of unemployed will be somewhat higher during the 1985 yearly average than it was in 1984. In 1986, with a slightly faster production increase, their number will probably stagnate at 2.3 million. Thus the unemployment rate will remain high, despite an increased capacity utilization rate. It is about 4 percentage points higher than it would have been during the second half of the 1970's with the same rate of capacity utilization.

#### Every Recession Brings Higher Base Level of Unemployment

This is a repetition of what could be observed after the recession of 1974-1975: in the course of a recession, the unemployment rate rises to a permanently higher level. To promote stronger economic growth, the Institute recommends moderation in wage demands and differentiation in labor costs by market process in order to lower unemployment. Also desirable would be the bringing forward of the second stage of the tax reform to 1/1/1986, even if the state would have to go deeper into debt. A temporarily increased state deficit due to tax relief can only bring positive developments. A lower tax burden stimulates performance motivation, promotes profitability, and encourages investments. The potential rise in interest rates due to the state's additional demand in the capital market is balanced by a gain in efficiency and productivity as a consequence of the lower tax rate.

An import of capital due to higher interest rates also counteracts the narrowness of the financial market, and lastly, a tax reduction increases liquidity in the money and capital market so that additional financial requirements of the state are countered, at least in the short term, by a more plentiful supply. One must also be clearly aware that international competition between tax systems is on the increase.

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ECONOMIC

SWEDEN

BRIEFS

INDUSTRIAL WORKERS' NUMBER INCREASES--The number of industrial workers last May was 549,900. This was an increase of 2,900 workers since April, according to the Central Bureau of Statistics. Of the total number of industrial workers last May, 421,900 were men and 128,000 women. Compared to May of last year, the number of industrial workers rose by 2.2 percent. Women registered an increase of 4.2 percent and men 1.5 percent. There were 8,800 new industrial workers last May while 7,200 departed. Worker statistics are based on reports submitted by industry on an optional day at the end of the month. [Text] [Stockholm DAGENS NYHETER in Swedish 18 Jul 85 p 10] 8925

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ENERGY

DENMARK/GREENLAND

# JOURNAL WARNS OF ENVIRONMENT RISKS IN EAST COAST OIL HUNT

Copenhagen BERLINGSKE TIDENDE in Danish 22 Jul 85 p 29

[Text] Great care has been taken in the search for oil not to disturb the Arctic animal life. There is only a 5-10 percent chance of finding oil, which makes the investment of billions especially risky.

The search for oil that is beginning this year in East Greenland has also ushered in the biggest high-risk investment in Danish history, according to the weekly magazine INGENIOREN.

With only a 5-10 percent chance that oil will be found, as much as 1 billion kroner (at 1983 price levels) will be invested in the search over the next 6 years.

The search for oil will be made on shore in Jameson Land on the east coast of Greenland. The seismic studies start in November and in 1987 drilling will begin. If the seismic studies are promising two holes will be drilled down to a depth of 3500 meters.

In contrast to the first time oil was sought off the west coast of Greenland in 1977-78, the holders of the concession are committed to carrying out seismic tests and drilling at least one hole.

There are three firms behind the oil search: Arco Greenland, a subsidiary of the American Atlantic Richfield Company, has experience in Arctic oil exploration in Alaska and will conduct the exploration and put up all the investment capital. The other two companies are the newly-formed Danish-Greenland state oil company, Nunacil, and the Arctic Mine Company.

If oil is found the revenue will go to offset the Danish block grant to Greenland. If there is money left over, talks will be held on how to divide it.

An effort is being made to conduct the oil search in such a way as to disturb the sensitive Arctic landscape as little as possible. Jameson Land, which is the same size as Jutland, has a rich bird population and around 3000 muskoxen live on the peninsula. The area is also important in the lives of ring seals, polar bears, narwhales and walruses.

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ENVIRONMENTAL QUALITY

SWEDEN

AGENCY DIRECTOR ON ACID RAIN DISPUTE WITH UK, CROP SPRAYING

Stockholm DAGENS NYHETER in Swedish 18 Jul 85 p 7

[Article by Lennart G. Johnsson: "Millions to Combat Acid Rain"]

[Text] The Swedish Environmental Protection Agency is aiding British environmental activists in their effort to pressure the government to reduce the nation's sulphur emissions which pose a threat to our forests and lakes. A couple of million kronor are being channelled to Great Britain via idealistic organizations in Sweden.

"It is not popular for us to get involved in other countries' affairs," said Environmental Protection Agency director Valfrid Paulsson. "But since the aid is being effected by organizations, we may be able to get results that would otherwise be impossible for a Swedish authority."

He does not understand Great Britain's reluctance to sign the Helsinki Agreement, by which sulphur emissions will be reduced by 30 percent. It seems impossible to break the stalemate through negotiations between the authorities. One can only hope that public opinion in Great Britain will put pressure on the government.

A letter from the Environmental Protection Agency and the forest industry in Sweden to members of the British Parliament is but one link in the effort to stir up public opinion there. It presents facts which prove that British air pollutants affect nature in Sweden.

A Little Tired

We talked to Valfrid Paulsson at his home in Vasby, Uppland, where he was relaxing after a strenuous year, which included many trips. This is his 19th year with the Environmental Protection Agency. It has been 19 years of almost continuous problems and he seemed a little tired.

"Everybody loves the Environmental Protection Agency and everybody scolds Valfrid Paulsson. Why is this?"

"Everybody does not scold me," he protested. "But those who do are being heard. Journalists have been personally involved to an unusual degree."

They have been personally offended if I did not immediately side with them. It has been very difficult at times, but I have never considered leaving."

"There are those who say that the Environmental Protection Agency is not worth its name, that it is passive and without teeth."

"Those who say this do not understand our role. We are not a state church or a state-sponsored environmental society. As a government agency we must play by the rules if we are to be taken seriously."

#### Realists

"Our proposals must not only be desirable, but realistic as well. Our technicians must have as much knowledge as do industrial technicians. They cannot be idealists only. Our job is to make sure that the idea of environmental protection penetrates all of society."

"But have environmentalists not been too soft for this harsh a world? Do we need more demonstrators?"

"Activist groups like Greenpeace are rather small to be of any help. Their action calls attention to problems. Later, others need to take over using conventional methods. However, it is important to stir up public opinion. We see this internationally today, and we have seen it several times before in this country. We have achieved results in matters supported by strong public opinion--like water protection, for example. We have achieved little in areas where public opinion is lacking."

#### Acid Rain

Acid rain, for example, is one area where it took time to generate public opinion, despite the fact that the Environmental Protection Agency had worked on the problem since 1968.

It has been even more difficult to generate public opinion concerning environmental problems created by motorists. Paulsson feels the mass media have failed here.

"The automobile industry is on the inside as far as the mass media are concerned and controls public opinion. Should an environmental group step forward and complain about the use of automobiles, automobile journalists would be allowed to counter for 3 weeks. The environment is one area in which car manufacturers do not compete; here they stand united!"

Paulsson views traffic noise as the most neglected environmental issue today. It is not being pursued because no one wants to pay the price. Since public opinion is weak on this issue, it is of no particular interest to decision-makers.

"Noise reduction should have been started 10 years ago, but we are still waiting for the Road Commission's proposal on noise standards."

## Struggle in Agriculture

The big struggle over environmental protection will no doubt be in the area of agriculture. During this budget year, the Environmental Protection Agency is supposed to enact an extensive program dealing with all the environmental problems in agriculture, the use of poisons, fertilizers and the conservation of nature.

"Of course, we will strive to reach solutions in concord with agricultural representatives," said Paulsson. "It is important to provide advice, education and information. But should we disagree on particular items of importance to environmental protection, we intend to push hard. We also need to look at legislation in this area."

## Keeping Poisons

The use of poisons in agriculture is of greater concern than forest spraying. In counties where there is a total ban on forest spraying one can go into any food store and buy poisons to spray in the garden. Critics seem to forget that cultivated fields and gardens receive 50 times more poison than do forests. For this reason, Paulsson is not certain we are making any progress in allowing counties to have a greater say in environmental protection.

## Good Reports

On the Environmental Protection Agency's "green" side, there is practically nothing but good reports. New natural reserves have been established and virgin mountain forests seem to have been saved. "Seem to"--because there seemingly are no absolutes in the area of environmental protection.

"All laws may be reevaluated," said Paulsson. "I do not know what would happen if we were to find a gold mine in Sarek national park. This does not mean that we could prohibit a thorough search of our national parks. However, a development similar to that in Stora lake, with gradual encroachments on a national park, is out of the question today for several reasons."

## Greater Pressure

The Environmental Protection Agency is under greater pressure from industry today. Industries are saying they cannot afford the desired antipollution measures; they want the requirements reduced or lifted. Paulsson strongly feels we need economic controls, the carrot as well as the stick.

He also feels it is too difficult to convict anyone of environmental crime today. The agency is rarely able to prove criminal intent. Instead, we should have a system whereby a company having been found to create pollution would have to immediately pay a stiff penalty. Possible intent would be determined later.

"This way, a company could insure itself against damages, and insurance companies' eventual control of industry might be just as effective as any government-controlled apparatus."

#### Dismissals

An unpleasant job awaits Paulsson when he returns from vacation. Grant reductions have affected the Environmental Protection Agency.

"We will be forced to notify about 20 staff members of their dismissal. This despite the fact that we do not have enough employees. This will mean longer processing time, which will affect industry. A six-month delay on the part of the licensing board would cost industry big money and affect many jobs."

#### Largest Share for Acid Rain

The largest share, 7.4 million kronor, of the agency's environmental research allocation of 54 million kronor will be spent on air pollution and acid rain research.

Some 3.7 million kronor have been allocated for lake and river pollution research, and 3.9 million for groundwater and field pollution research.

Most of the roughly 300 projects included in next year's research budget have been under way for a couple of years.

Some 3.5 million kronor will be divided among various researchers in the area of poison and health effects, 2.3 million for marine environment research, 1 million for noise research and 3.4 million for excessive ocean fertilization research.

Wildlife research will be awarded 3.7 million kronor, which will come from the Injury to Wildlife Indemnity Fund.

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